SAMSUNG

MULTI AIR CONDITIONER

INDOOR UNIT

FREE JOINT	FIXED
MH020FPEA	MH14VP2-07
MH023FPEA	MH16VP2-07
MH026FPEA	MH16VP2-09
MH035FPEA	MH18VP2-09
MH052FPEA	MH19VP2-07
MH052FPEA1	MH19VP2-12
MH023FWEA	MH30VP2-09
MH026FWEA	MH30VP2-12
MH035FWEA	MH14VW2-07
MH052FWEA	MH16VW2-07
MH026FKEA	MH16VW2-09
MH035FKEA	MH18VW2-09
MH052FDEA	MH19VW2-07
MH023FEEA	MH19VW2-12
MH026FEEA	MH30VW2-09
MH035FEEA	MH30VW2-12

OUTDOOR UNIT

FREE JOINT	FIXED
MH040FXEA2	MH14VP2X
MH052FXEA2	MH16VP2X
MH068FXEA4	MH18VP2X
MH080FXEA4	MH19VP2X
	MH30VP2X
	MH14VW2X
	MH16VW2X
	MH18VW2X
	MH19VW2X
	MH30VW2X

SERVICE Manual

AIR CONDITIONER

THE FEATURE OF PRODUCT

■ **Multi Inverter(Free Joint Multi) Series**

– Variable Indoor Unit Combination
(Free Joint Multi : MH040FXEA2/MH052FXEA2/
MH068FXEA4/MH080FXEA4)

– Multi Inverter(Free Joint Multi) Series delivers comfort to 2~4 rooms with a Single Outdoor Unit

■ **BLDC Inverter Compressor**

– Energy Saving Function

■ **Convenient Installation**

■ **Premium Indoor Unit**

For more information, Please access to our service web site (http://itself.sec.samsung.co.kr)

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1. Precautions

1-1 Installing the air conditioner

- Users should not install the air conditioner by themselves.
  Ask the dealer or authorized company to install the air conditioner except the window-type air conditioner in U.S.A and Canada.
- If you don't install the air conditioner properly, it may cause a fire, a water leakage or an electric shock.
- You must install the air conditioner according to the national wiring regulations and safety regulations.
- Install the indoor unit higher than 2.5m from the floor to avoid the injury caused by the operation of the fan.
  (except the window-type air conditioner)
- The manufacturer is not responsible for any accidents or injury caused by an incorrect installation.
- When installing the built-in type air conditioner, keep all electric cables such as the power cable and the connection cord in pipes, ducts, or cable channels to protect them from the danger of impact or any other incidents.

1-2 Power supply and circuit breaker

- If the power cord of the air conditioner is damaged, it must be replaced by the manufacturer or a qualified person in order to avoid a hazard.
- The air conditioner must be plugged into an independent circuit if applicable or connect the power cable to the auxiliary circuit breaker.
  An all pole disconnection from the power supply must be incorporated in the fixed wiring with a contact opening of >3mm.
- Do not extend an electric cord to the air conditioner.
- The air conditioner must be plugged in after you complete the installation.

1-3 During operation

- Do not repair the air conditioner at your discretion.
  It is recommended to contact a service center directly.
- Never spill any kind of liquid on the air conditioner.
  If this happens, turn off the air conditioner and contact an authorized service center.
- Do not insert anything between the airflow blades to prevent damage of the inner fan and consequent injury.
  Keep children away from the air conditioner.
- Do not place any obstacles in front of the air conditioner.
- Do not spray any kind of liquid into the indoor unit. If this happens, turn off the air conditioner and contact a service center.
- Make sure that the air conditioner is well ventilated at all times:
  Do not place a cloth or other materials over it.
- Remove the batteries if you don't use the remote control for a long time. (If applicable)
- Use the remote control within 7 meters from the indoor unit. (If applicable)

1-4 Disposing of the unit

- Before throwing out the air conditioner, remove the batteries from the remote control.
- When you dispose of the air conditioner, consult your dealer. If pipes are removed incorrectly, refrigerant may blow out and cause air pollution. When it contacts with your skin, it can cause skin injury.
- The package of the air conditioner should be recycled or disposed of properly for environmental reasons.

1-5 Others

- Never store or load the air conditioner upside down or sideways to prevent the damage to the compressor.
- Young children or infirm persons should be always supervised when they use the air conditioner.
- Max current is measured according to IEC standard for safety.
- Current is measured according to ISO standard for energy efficiency.

2. Product Specifications

2-1 The Feature of Product

■ **Multi Inverter(Free Joint Multi) Series delivers comfort to 2~4 rooms with a Single Outdoor Unit.**

■ **Inverter for High Efficiency Operation.**

Thanks to inverter control, efficiency of operation of the outdoor unit is enhanced depending on the number of indoor units operated and the temperature setting.

When only one indoor unit is used, power is saved, resulting in a smaller electricity bill. When all indoor units are used, high-power operation achieves comfort quickly in all rooms.

■ **Installation of indoor units on different floors is possible.**

■ **Characteristics**

- Using electronic expansion valve control
- LED display
- 3-step BIO air purifying system
- Anti-rust coated heat exchanger & cabinet

■ **Various Indoor units & combinations**

- G-premium
- Prestige
- 1-Way cassette
- Silhouette duct
- Slim duct

■ **Convenient Installation**

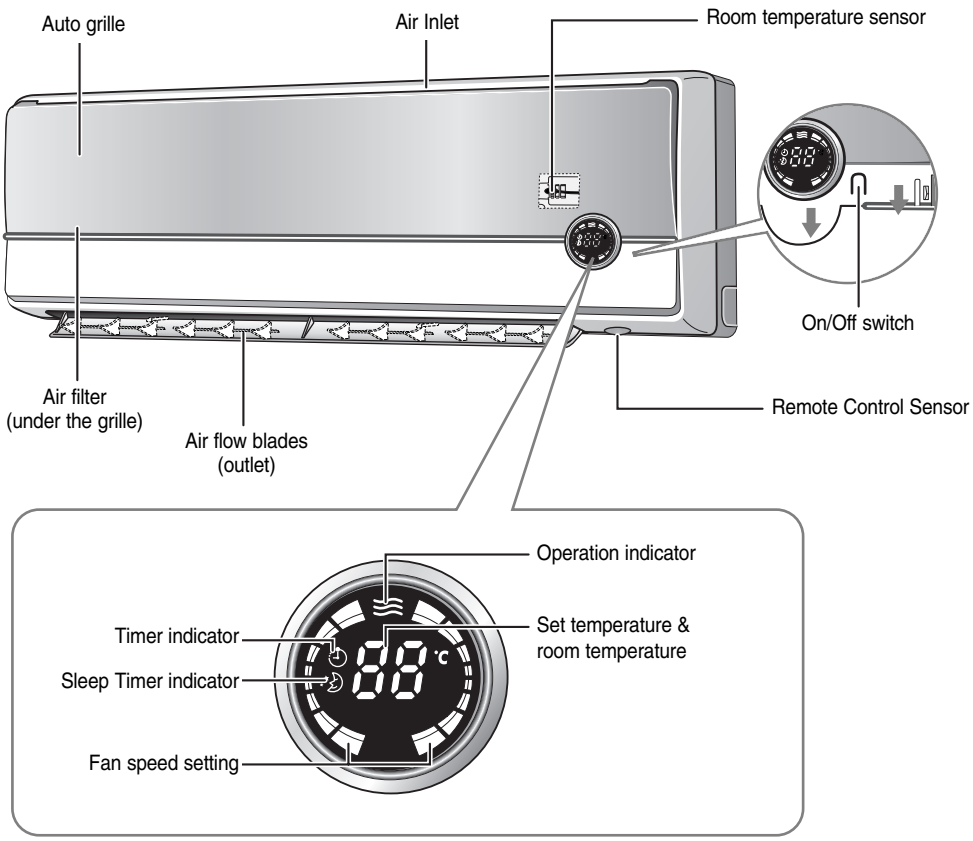
Can install between outdoor unit and indoor unit easily and conveniently.

2-2 Name of Each Part

2-2-1 Indoor Unit

■ MH✳✳✳FPEA✳/MH✳✳VP2-✳✳

The design and shape are subject to change according to the model.



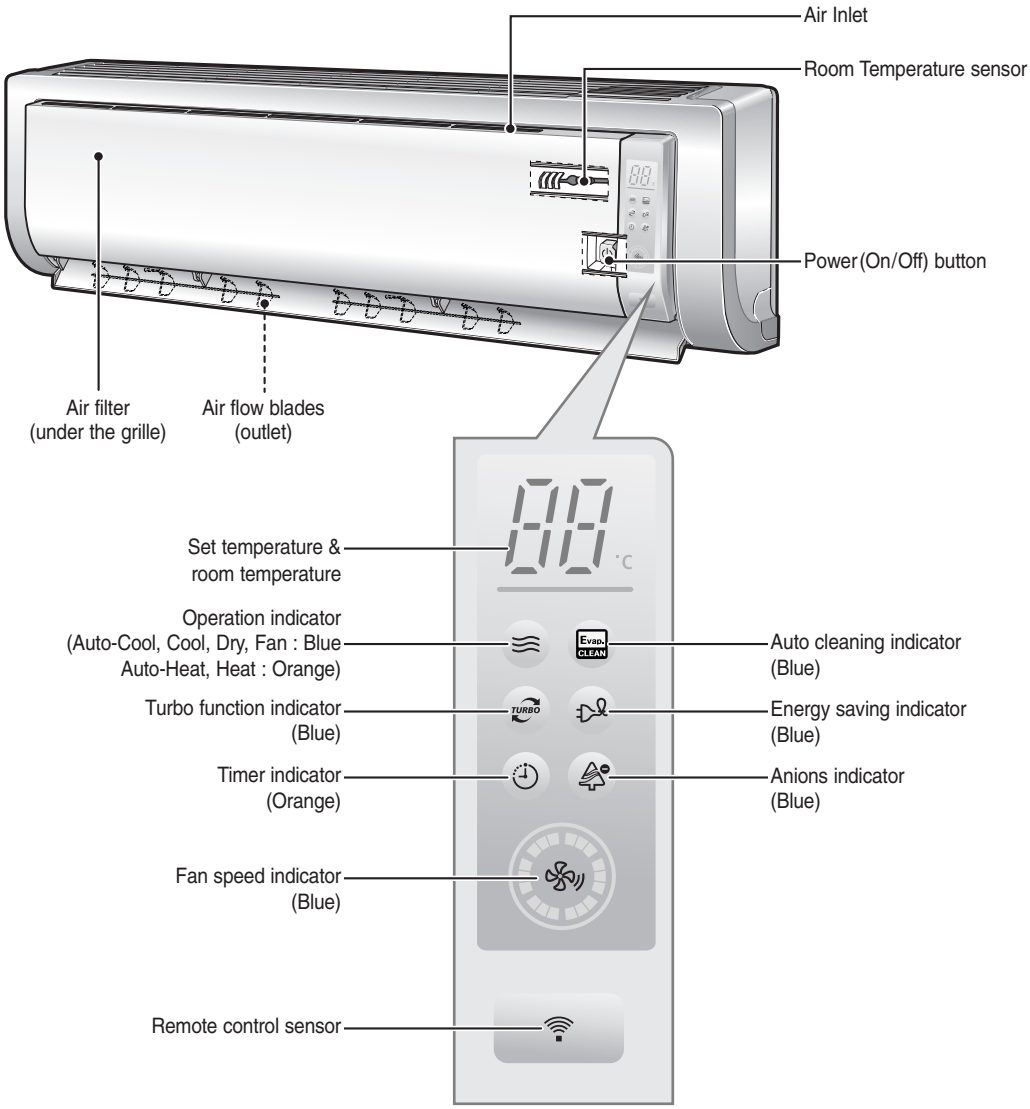
Note : • If you want to turn On/Off the Display during operation, press the Digital On/Off button on the remote control.

• The room temperature sensor senses air temperature around the sensor, and shows the temperature on the display.

Indoor Unit(cont.)

■ MH✳✳✳FWEA/MH✳✳VW2-✳✳

The design and shape can be changed according to the model.



Note : • In the Auto mode, 2 fan indicators increase and decrease continuously and turn round.

• In the modes except the Auto mode, the fan speed indicator increases and decreases continuously and turn round each time you press the button. If you set the Turbo function, the fan speed indicator turns round with the maximum setting and speed.

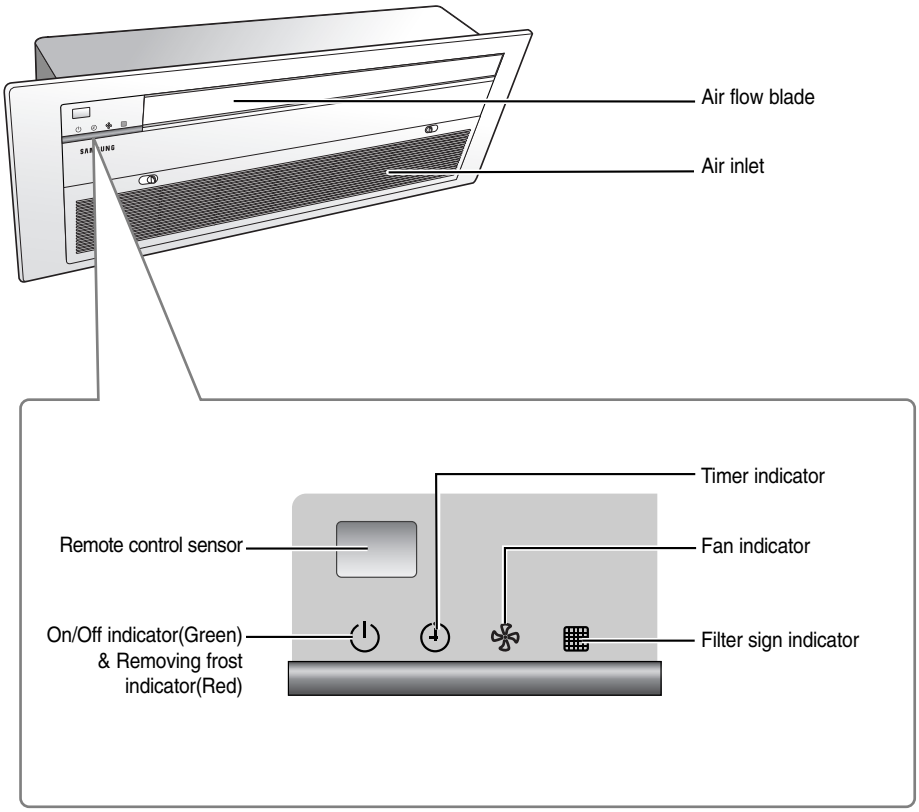
• If you want to turn on/off the Display during operation, press the Digital On/Off button on the remote control.

• The room temperature sensor senses air temperature around the sensor, and shows the temperature on the display.

Indoor Unit(cont.)

■ MH✳✳✳FKEA

The figures are shown in this instruction may differ from yours depending on the model.

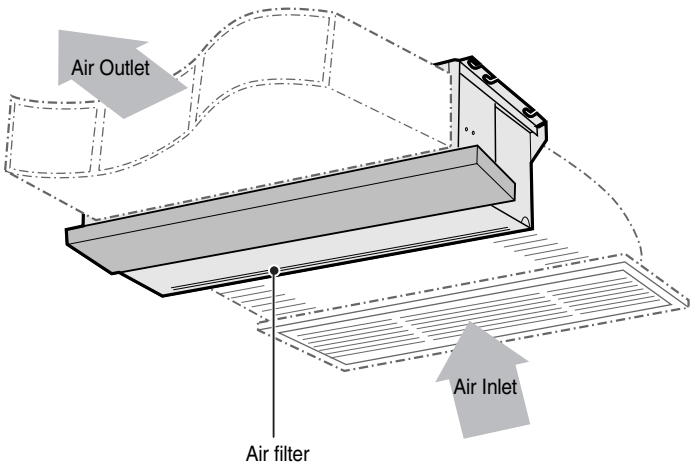


Indoor Unit(cont.)

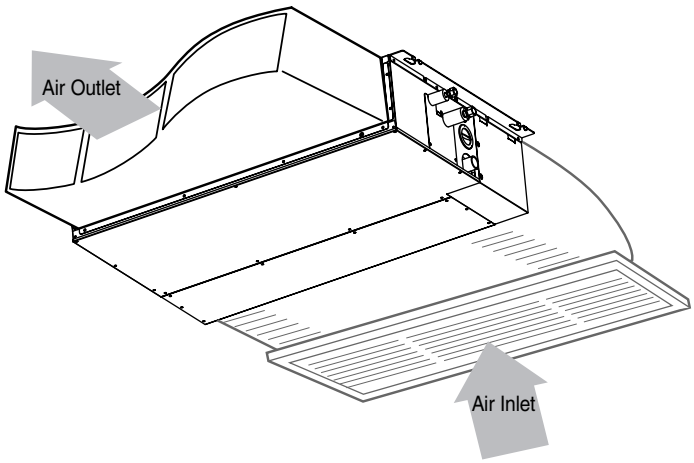
■ MH✳✳✳FDEA/MH✳✳✳FEEA

The figures are shown in this instruction may differ from yours depending on the model.

• MH✳✳✳FDEA : Silhouette Duct

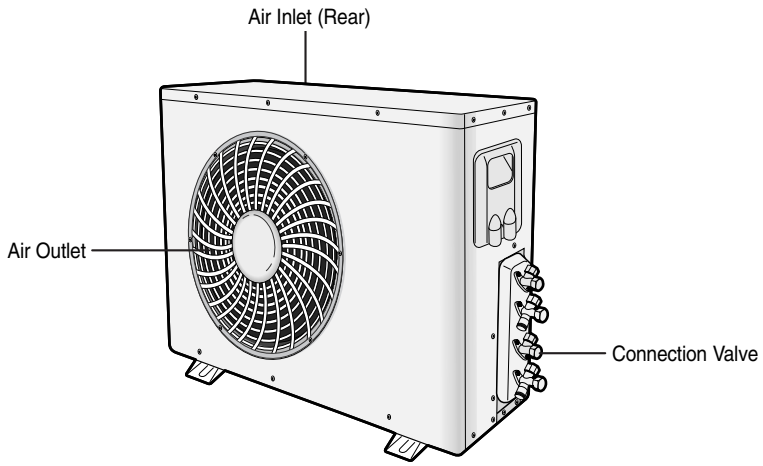


• MH✳✳✳FEEA : Slim Duct

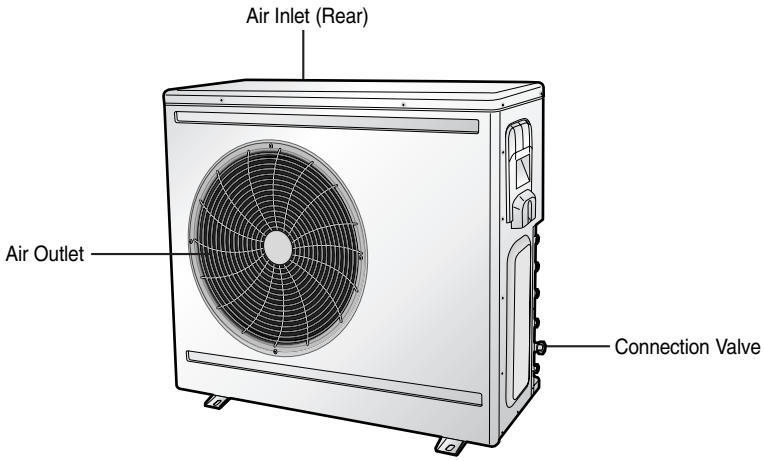


2-2-2 Outdoor Unit

■ **MH040FXEA2/MH052FXEA2/MH14VP2X/MH16VP2X/MH18VP2X/MH19VP2X/ MH14VW2X/MH16VW2X/MH18VW2X/MH19VW2X**



■ **MH068FXEA4/MH080FXEA4/MH30VP2X/MH30VW2X**



Note : • If the heat exchanger in the outdoor unit gets dusty, cooling efficiency may fall. So clean the heat exchanger with water when it becomes dirty. However, be careful when you wash the surface of the heat exchanger because it is very sharp.

2-3 Product Specifications

Item				Model	MH020FPEA MH**VP2-07	MH023FPEA	MH026FPEA MH**VP2-09
					INDOOR UNIT		
Type					Wall-mounted	Wall-mounted	Wall-mounted
Performance	Cooling			kW	2.00	2.30	2.60
	Heating				2.20	2.60	2.90
	Dehumidifying			ℓ/h	1.4	1.4	1.4
	Air Volume		Cooling	m^3/min	6.5	7.0	7.0
			Heating		6.6	7.8	7.8
	Noise		Cooling	dB	40	40	40
			Heating		40	40	40
	Power			ø,V,Hz	1,220~240,50	1,220~240,50	1,220~240,50
Power	Power Consumption		Cooling	W	30	30	30
			Heating		30	30	30
	Operating Current		Cooling	A	0.18	0.18	0.18
			Heating		0.18	0.18	0.18
Size	Outer Dimension		WxHxD	mm	795x258x179	795x258x179	795x258x179
				inch	31.3x10.2x7.0	31.3x10.2x7.0	31.3x10.2x7.0
	Weight			kg	7.5	7.5	7.5
	Refrigerant Pipe		Liquid	mmxL(m)	ø6.35x7.5	ø6.35x7.5	ø6.35x7.5
			Gas	mmxL(m)	ø9.52x7.5	ø9.52x7.5	ø9.52x7.5
	Drain Hose			DxL(mm)	ø18x535	ø18x535	ø18x535
	Blower	Type			Cross-fan	Cross-fan	Cross-fan
		Motor	Type		steel	steel	steel
			Rated Output	W	11	11	11
Heat Exchanger					2ROW 10STEP	2ROW 10STEP	2ROW 10STEP
Refrigerant Control Unit					EEV	EEV	EEV

Product Specifications(cont.)

Item \ Model					MH035FPEA MH**VP2-12	MH052FPEA MH052FPEA1
					INDOOR UNIT	
Type					Wall-mounted	Wall-mounted
Performance	Cooling			kW	3.50	5.20
	Heating				3.80	5.60
	Dehumidifying			ℓ/h	1.9	2.5
	Air Volume		Cooling	m^3/min	8.3	13.3
			Heating		8.8	13.4
	Noise		Cooling	dB	42	48
			Heating		42	48
	Power			ø,V,Hz	1,220~240,50	1,220~240,50
Power	Power Consumption		Cooling	W	35	50
			Heating		35	50
	Operating Current		Cooling	A	0.19	0.30
			Heating		0.19	0.30
Size	Outer Dimension		WxHxD	mm	890x285x179	1,080x315x205
				inch	35.0x11.2x7.0	42.5x12.4x8.1
	Weight			kg	8.5	13
	Refrigerant Pipe		Liquid	mmxL(m)	ø6.35x7.5	ø6.35x7.5
			Gas	mmxL(m)	ø9.52x7.5	ø12.7x7.5
	Drain Hose			DxL(mm)	ø18x535	ø18x600
	Blower	Type			Cross-fan	Cross-fan
		Motor	Type		steel	steel
			Rated Output	W	15	19
Heat Exchanger					2ROW 12STEP	2ROW 15STEP
Refrigerant Control Unit					EEV	EEV

Product Specifications(cont.)

Item \ Model					MH023FWEA/MH026FWEA MH**VW2-07/MH**VW2-09	MH035FWEA MH**VW2-12	MH052FWEA
					INDOOR UNIT		
Type					Wall-mounted	Wall-mounted	Wall-mounted
Performance	Cooling			kW	2.60	3.50	5.20
	Heating				2.90	3.80	5.60
	Dehumidifying			ℓ/h	1.4	1.9	2.5
	Air Volume		Cooling	m^3/min	7.0	8.2	13.3
			Heating		7.3	8.8	14.0
	Noise		Cooling	dB	40	43	48
			Heating		40	43	48
	Power			ø,V,Hz	1,220~240,50	1,220~240,50	1,220~240,50
Power	Power Consumption		Cooling	W	30	35	50
			Heating		30	35	50
	Operating Current		Cooling	A	0.18	0.19	0.30
			Heating		0.18	0.19	0.30
Size	Outer Dimension		WxHxD	mm	950x268x165	950x268x165	1,099x315x200
				inch	37.4x10.6x6.5	37.4x10.6x6.5	43.3x12.4x7.9
	Weight			kg	9.0	9.0	13.0
	Refrigerant Pipe		Liquid	mmxL(m)	ø6.35x7.5	ø6.35x7.5	ø6.35x7.5
			Gas	mmxL(m)	ø9.52x7.5	ø9.52x7.5	ø12.7x7.5
	Drain Hose			DxL(mm)	ø18x920	ø18x920	ø18x920
	Blower	Type			Cross-flow	Cross-flow	Cross-flow
		Motor	Type		Resin/steel	Resin/steel	Resin/steel
			Rated Output	W	15	15	15
Heat Exchanger					2ROW 12STEP	2ROW 12STEP	2ROW 16STEP
Refrigerant Control Unit					EEV	EEV	EEV

Product Specifications(cont.)

Item \ Model					MH026FKEA	MH035FKEA	MH052FDEA
					INDOOR UNIT		
Type					1-Way Cassette	1-Way Cassette	Silhouette Duct
Perfor-mance	Cooling			kW	2.60	3.50	5.20
	Heating				2.90	3.80	5.60
	Air Volume		Cooling	m^3/min	7.0	7.5	15.0
			Heating		7.5	8.0	15.5
	Noise		Cooling	dB	40	42	43
			Heating		40	42	43
	Power			ø,V,Hz	1,220~240,50	1,220~240,50	1,220~240,50
Power	Power Consumption		Cooling	W	40	45	145
			Heating		40	45	145
	Operating Current		Cooling	A	0.20	0.23	0.77
			Heating		0.20	0.23	0.77
Size	Outer Dimension		WxHxD	mm	970x180x390	970x180x390	1,340x260x600
				inch	38.2x7.1x15.4	38.2x7.1x15.4	52.8x10.2x23.6
	Weight			kg	15	15	41
	Refrigerant Pipe		Liquid	mmxL(m)	ø6.35x7	ø6.35x7	ø6.35x7
			Gas	mmxL(m)	ø9.52x7	ø9.52x7	ø12.7x7
	Drain Hose			DxL(mm)	ø20x2,000	ø20x2,000	ø21x2,000
	Blower	Type			Cross-fan	Cross-fan	Sirocco
		Motor	Type		steel	steel	steel
			Rated Output	W	28	28	97
Heat Exchanger					2ROW 14STEP	2ROW 14STEP	2ROW 12STEP
Refrigerant Control Unit					EEV	EEV	EEV

Product Specifications(cont.)

Item \ Model					MH023FEEA MH026FEEA	MH035FEEA
					INDOOR UNIT	
Type					Slim Duct	Slim Duct
Performance	Cooling			kW	2.60	3.50
	Heating				2.90	3.80
	Air Volume		Cooling	m^3/min	8.6	9.8
			Heating		9.0	10.3
	Noise		Cooling	dB	37	37
			Heating		38	38
	Power			ø,V,Hz	1,220~240,50	1,220~240,50
Power	Power Consumption		Cooling	W	80	80
			Heating		80	80
	Operating Current		Cooling	A	0.40	0.40
			Heating		0.40	0.40
Size	Outer Dimension		WxHxD	mm	900x199x600	900x199x600
				inch	38.2x7.1x15.4	38.2x7.1x15.4
	Weight			kg	26	26
	Refrigerant Pipe		Liquid	mmxL(m)	ø6.35x7	ø6.35x7
			Gas	mmxL(m)	ø9.52x7	ø9.52x7
	Blower	Type			Sirocco fan	Sirocco fan
		Motor	Type		steel	steel
			Rated Output	W	29	29
Heat Exchanger					2ROW 12STEP	2ROW 12STEP
Refrigerant Control Unit					EEV	EEV

Product Specifications(cont.)

Item \ Model					MH040FXEA2	MH052FXEA2	MH14VP2X	MH16VP2X
					OUTDOOR UNIT			
Type					Free Joint Multi		Wall Mounting Multi Split	
Perfor-mance	Capacity		Cooling	kW	2.0~5.5	2.0~6.5	4.0	4.6
			Heating		2.2~6.0	2.2~7.3	4.4	5.1
	Air Volume			m^3/min	48	48	48	48
	Noise		Cooling	dB	56	56	56	56
			Heating		57	57	57	57
Power (Outdoor Only)	Power			ø,V,Hz	1,220-240V~,50Hz			
	Power Consumption		Cooling	W	740~1,535	740 ~ 2,090	1,290	1,350
			Heating		820~1,785	820 ~ 2,350	1,540	1,700
	Operating Current		Cooling	A	3.4~6.7	3.4~9.0	5.8	6.0
			Heating		3.7~8.1	3.7~10.2	6.7	7.4
	Fuse Capacity			A	20	20	20	20
Size	Dimension	WxHxD		mm	880x368x310	880x368x310	880x638x310	880x638x310
	Weight			kg	58	58	58	58
Com-pressor	Type				Single Rotary			
	Model Name				G4B135LU1EH			
	Motor	Type			BLDC Permanent Magnetic Motor			
	Freezer Oil	Type			FREOLα68ES-T, Ze-GLES RB68-EP			
		Capacity		cc	600	600	600	600
	Protection Device				OLP	OLP	OLP	OLP
Fan Motor & Blower	Blower	Type			Propeller	Propeller	Propeller	Propeller
		Size		OD(mm)xL(m)	ø460	ø460	ø460	ø460
	Motor	Rated Output		W	128	128	128	128
		Capacitor		uFxVAC	3.0x450	3.0x450	3.0x450	3.0x450
Heat Exchanger					2ROW 28STEP	2ROW 28STEP	2ROW 28STEP	2ROW 28STEP
Refrigerant Control Unit					EEV	EEV	EEV	EEV
Refrigerant to Charge(R410A)				gr	1,700	1,700	1,700	1,700

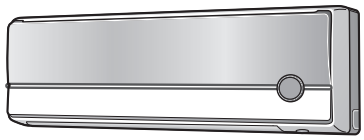
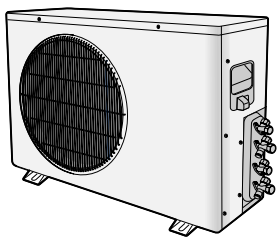
Product Specifications(cont.)

Item \ Model				MH18VP2X	MH19VP2X	MH14VW2X MH16VW2X MH18VW2X	MH19VW2X
				OUTDOOR UNIT			
Type				Wall Mounting Multi Split			
Perfor-mance	Capacity	Cooling	kW	5.20	5.50	5.20	5.90
		Heating		5.80	6.00	5.80	6.57
	Air Volume		m^3/min	48	48	48	48
	Noise	Cooling	dB	56	56	56	56
		Heating		57	57	57	57
Power (Outdoor Only)	Power		ø,V,Hz	1,220-240V~,50Hz			
	Power Consumption	Cooling	W	1,440	1,535	1,440	1,885
		Heating		1,745	1,785	1,745	2,125
	Operating Current	Cooling	A	6.3	6.7	6.3	8.3
		Heating		7.8	8.1	7.8	9.3
	Fuse Capacity		A	20	20	20	20
Size	Dimension	WxHxD	mm	880x368x310	880x638x310	880x638x310	880x638x310
	Weight		kg	58	58	58	58
Com-pressor	Type			Single Rotary			
	Model Name			G4B135LU1EH			
	Motor	Type		BLDC Permanent Magnetic Motor			
	Freezer Oil	Type		FREOL α68ES-T, Ze-GLES RB68-EP			
		Capacity	cc	600	600	600	600
	Protection Device			OLP	OLP	OLP	OLP
Fan Motor & Blower	Blower	Type		Propeller	Propeller	Propeller	Propeller
		Size	OD(mm)xL(m)	ø460	ø460	ø460	ø460
	Motor	Rated Output	W	128	128	128	128
		Capacitor	uFxVAC	3.0x450	3.0x450	3.0x450	3.0x450
Heat Exchanger				2ROW 28STEP	2ROW 28STEP	2ROW 28STEP	2ROW 28STEP
Refrigerant Control Unit				EEV	EEV	EEV	EEV
Refrigerant to Charge(R410A)			gr	1,700	1,700	1,700	1,700

Product Specifications(cont.)

Item \ Model					MH068FXEA4	MH080FXEA4	MH30VP2X	MH30VW2X
					OUTDOOR UNIT			
Type					Free Joint Multi		Wall Mounting Multi Split	
Performance	Capacity		Cooling	kW	2.6~8.9	2.6~9.3	8.0	8.0
			Heating		2.9~10.3	2.9~10.9	8.9	8.9
	Air Volume			m^3/min	48	48	48	48
	Noise		Cooling	dB	57	58	58	58
			Heating		58	59	59	59
Power (Outdoor Only)	Power			ø,V,Hz	1,220-240V~,50Hz			
	Power Consumption		Cooling	W	830~2,470	830~2,505	2,400	2,305
			Heating		1,230~2,705	1,230~2,705	2,750	2,655
	Operating Current		Cooling	A	3.9~10.8	3.9~10.9	10.0	9.5
			Heating		5.6~11.9	5.6~11.9	11.4	10.9
	Fuse Capacity			A	30	30	30	30
Size	Dimension	WxHxD		mm	880x796x330	880x796x330	880x796x330	880x796x330
	Weight			kg	72	72	72	72
Compressor	Type				Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary
	Model Name				G5T360FU1EK	G5T360FU1EK	G5T360FU1EK	G5T360FU1EK
	Motor	Type			BLDC Permanent Magnetic Motor			
	Freezer Oil	Type			FREOLα68ES-T, Ze-GLES RB68-EP			
		Capacity		cc	1,100	1,100	1,100	1,100
	Protection Device				OLP	OLP	OLP	OLP
Fan Motor & Blower	Blower	Type			Propeller	Propeller	Propeller	Propeller
		Size		OD(mm)xL(m)	ø460	ø460	ø460	ø460
	Motor	Rated Output		W	128	128	128	128
		Capacitor		uFxVAC	3.0x450	3.0x450	3.0x450	3.0x450
Heat Exchanger					2ROW 36STEP	2ROW 36STEP	2ROW 36STEP	2ROW 36STEP
Refrigerant Control Unit					EEV	EEV	EEV	EEV
Refrigerant to Charge(R410A)				gr	2,900	2,900	2,900	2,900

2-4 The Comparative Specifications of Product

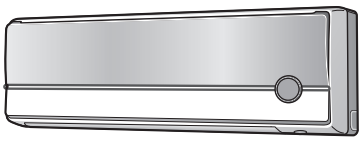
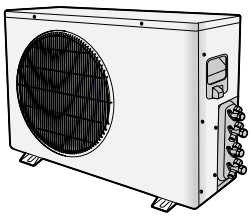
<table>
<tr><th colspan="2">Item</th><th colspan="2">MH040FXEA2/MH052FXEA2</th><th colspan="2">MH18AP2X</th></tr>
<tr><td rowspan="3">Design</td><td>Indoor Unit</td><td colspan="2"> </td><td colspan="2">  </td></tr>
<tr><td>Outdoor Unit</td><td colspan="2"> </td><td colspan="2">  </td></tr>
<tr><td rowspan="6">Net Weight</td><td rowspan="5">Indoor Unit</td><td>MH020FPEA
MH026FPEA</td><td>7.5kg</td><td rowspan="5">MH18AP2-09</td><td rowspan="5">7.5kg</td></tr>
<tr><td>MH035FPEA</td><td>8.5kg</td></tr>
<tr><td>MH023FWEA
MH026FWEA
MH035FWEA</td><td>9.0kg</td></tr>
<tr><td>MH026FKEA
MH035FKEA</td><td>15.0kg</td></tr>
<tr><td>MH023FEEA
MH026FEEA
MH035FEEA</td><td>26.0kg</td></tr>
<tr><td>Outdoor Unit</td><td>MH040FXEA2
MH052FXEA2</td><td>58.0kg</td><td>MH18AP2X</td><td>59.5kg</td></tr>
</table>

The Comparative Specifications of Product(cont.)

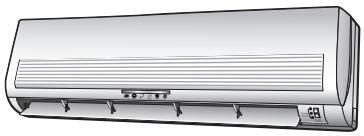
<table>
<tr><th colspan="2">Item</th><th colspan="2">MH040FXEA2/MH052FXEA2</th><th colspan="2">MH18AP2X</th></tr>
<tr><td rowspan="6">Outer Dimension</td><td rowspan="5">Indoor Unit</td><td>MH020FPEA
MH026FPEA</td><td>795x258x179mm</td><td rowspan="5">MH18AP2-09</td><td rowspan="5">795x258x179mm</td></tr>
<tr><td>MH035FPEA</td><td>890x285x179mm</td></tr>
<tr><td>MH023FWEA
MH026FWEA
MH035FWEA</td><td>950x268x165mm</td></tr>
<tr><td>MH026FKEA
MH035FKEA</td><td>970x180x390mm</td></tr>
<tr><td>MH023FEEA
MH026FEEA
MH035FEEA</td><td>900x199x600mm</td></tr>
<tr><td>Outdoor Unit</td><td>MH040FXEA2
MH052FXEA2</td><td>880x638x330mm</td><td>MH18AP2X</td><td>880x638x310mm</td></tr>
<tr><td rowspan="6">Noise</td><td rowspan="5">Indoor Unit</td><td>MH020FPEA
MH026FPEA</td><td>40dB↓</td><td rowspan="5">MH18AP2-09</td><td rowspan="5">39dB↓</td></tr>
<tr><td>MH035FPEA</td><td>42dB↓</td></tr>
<tr><td>MH023FWEA
MH026FWEA
MH035FWEA</td><td>40dB↓</td></tr>
<tr><td>MH026FKEA
MH035FKEA</td><td>40dB↓</td></tr>
<tr><td>MH023FEEA
MH026FEEA
MH035FEEA</td><td>45dB↓</td></tr>
<tr><td>Outdoor Unit</td><td>MH040FXEA2
MH052FXEA2</td><td>56dB↓(Cooling)
57dB↓(Heating)</td><td>MH18AP2X</td><td>57dB↓</td></tr>
<tr><td colspan="2" rowspan="2">The Feature of Product</td><td colspan="2">Free Joint Multi(Variable Indoor Unit)
(ex. 2RAC, RAC+1-WAY, RAC+1-WAY, RAC+DUCT)</td><td colspan="2">Only 2 RAC Indoor Unit</td></tr>
<tr><td colspan="2">BLDC INVERTER COMPRESSOR</td><td colspan="2">2 ROTARY COMPRESSOR</td></tr>
</table>

The Comparative Specifications of Product(cont.)

<table>
<tr><th colspan="2">Item</th><th colspan="2">MH14V✳2X/MH16V✳2X
MH18V✳2X/MH19V✳2X</th><th colspan="2">MH18AP2X</th></tr>
<tr><td rowspan="2">Design</td><td>Indoor Unit</td><td colspan="2"><MH✳✳VP2-✳✳>

<MH✳✳VW2-✳✳>
 </td><td colspan="2">  </td></tr>
<tr><td>Outdoor Unit</td><td colspan="2"> </td><td colspan="2">  </td></tr>
<tr><td rowspan="4">Net Weight</td><td rowspan="3">Indoor Unit</td><td>MH✳✳VP2-07
MH✳✳VP2-09</td><td>7.5kg</td><td rowspan="3">MH18AP2-09</td><td rowspan="3">7.5kg</td></tr>
<tr><td>MH✳✳VP2-12</td><td>8.5kg</td></tr>
<tr><td>MH✳✳VW2-07
MH✳✳VW2-09
MH✳✳VW2-12</td><td>9.0kg</td></tr>
<tr><td>Outdoor Unit</td><td>MH✳✳VP2X
MH✳✳VW2X</td><td>58.0kg</td><td>MH18AP2X</td><td>59.5kg</td></tr>
<tr><td rowspan="4">Outer Dimension</td><td rowspan="3">Indoor Unit</td><td>MH✳✳VP2-07
MH✳✳VP2-09</td><td>795x258x179mm</td><td rowspan="3">MH18AP2-09</td><td rowspan="3">795x258x179mm</td></tr>
<tr><td>MH✳✳VP2-12</td><td>890x285x179mm</td></tr>
<tr><td>MH✳✳VW2-07
MH✳✳VW2-09
MH✳✳VW2-12</td><td>950x268x165mm</td></tr>
<tr><td>Outdoor Unit</td><td>MH✳✳VP2X
MH✳✳VW2X</td><td>880x638x330mm</td><td>MH18AP2X</td><td>880x638x310mm</td></tr>
<tr><td rowspan="4">Noise</td><td rowspan="3">Indoor Unit</td><td>MH✳✳VP2-07
MH✳✳VP2-09</td><td>40dB↓</td><td rowspan="3">MH18AP2-09</td><td rowspan="3">39dB↓</td></tr>
<tr><td>MH✳✳VP2-12</td><td>42dB↓</td></tr>
<tr><td>MH✳✳VW2-07
MH✳✳VW2-09
MH✳✳VW2-12</td><td>40dB↓</td></tr>
<tr><td>Outdoor Unit</td><td>MH✳✳VP2X
MH✳✳VW2X</td><td>56dB↓(Cooling)/
57dB↓(Heating)</td><td>MH18AP2X</td><td>57dB↓</td></tr>
<tr><td colspan="2">The Feature of Product</td><td colspan="2">BLDC INVERTER COMPRESSOR</td><td colspan="2">2 ROTARY COMPRESSOR</td></tr>
</table>

The Comparative Specifications of Product(cont.)

<table>
<tr><th colspan="2">Item</th><th colspan="2">MH068FXEA4
MH080FXEA4</th><th colspan="2">UMF30C2E4</th></tr>
<tr><td rowspan="7">Design</td><td rowspan="6">Indoor
Unit</td><td colspan="2" rowspan="6"> </td><td colspan="2" rowspan="6">  </td></tr>
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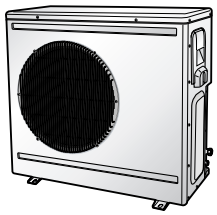
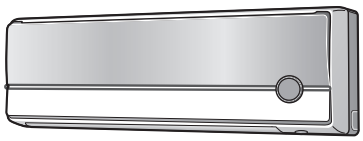
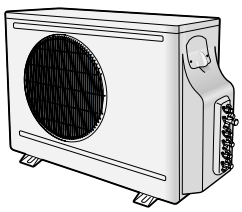
<tr><td>Outdoor
Unit</td><td colspan="2"> </td><td colspan="2">  </td></tr>
<tr><td rowspan="9">Net Weight</td><td rowspan="8">Indoor Unit</td><td>MH023FPEA
MH026FPEA</td><td>7.5kg</td><td rowspan="3">AMF09C2E
AMF12C2E</td><td rowspan="3">7.7kg</td></tr>
<tr><td>MH035FPEA</td><td>8.5kg</td></tr>
<tr><td>MH052FPEA✳</td><td>13.0kg</td></tr>
<tr><td>MH023FWEA
MH026FWEA
MH035FWEA</td><td>9.0kg</td><td rowspan="5">AMF18C2E</td><td rowspan="5">13.0kg</td></tr>
<tr><td>MH052FWEA</td><td>13.0kg</td></tr>
<tr><td>MH026FKEA
MH035FKEA</td><td>15.0kg</td></tr>
<tr><td>MH023FEEA
MH026FEEA
MH035FEEA</td><td>26.0kg</td></tr>
<tr><td>MH052FDEA</td><td>41.0kg</td></tr>
<tr><td>Outdoor Unit</td><td>MH068FXEA4
MH080FXEA4</td><td>72.0kg</td><td>UMF30C2E4</td><td>72.0kg</td></tr>
</table>

The Comparative Specifications of Product(cont.)

<table>
<tr><th colspan="2" rowspan="2">Item</th><th colspan="2">MH060FXEA4
MH080FXEA4</th><th colspan="2">UMF30C2E4</th></tr>
<tr><th colspan="2"></th><th colspan="2"></th></tr>
<tr><td rowspan="11">Outer Dimension</td><td rowspan="9">Indoor Unit</td><td>MH023FPEA
MH026FPEA</td><td>795x258x179mm</td><td rowspan="4">AMF09C2E
AMF12C2E</td><td rowspan="4">790x245x165mm</td></tr>
<tr><td>MH035FPEA</td><td>890x285x179mm</td></tr>
<tr><td>MH052FPEA✳</td><td>1,080x315x205mm</td></tr>
<tr><td>MH023FWEA
MH026FWEA
MH035FWEA</td><td>950x268x165mm</td></tr>
<tr><td>MH052FWEA</td><td>1,099x315x200mm</td><td rowspan="4">AMF18C2E</td><td rowspan="4">1,080x275x204mm</td></tr>
<tr><td>MH026FKEA
MH035FKEA</td><td>970x180x390mm</td></tr>
<tr><td>MH023FEEA
MH026FEEA
MH035FEEA</td><td>900x199x600mm</td></tr>
<tr><td>MH052FDEA</td><td>1,340x260x600mm</td></tr>
<tr><td>Outdoor Unit</td><td>MH068FXEA4
MH080FXEA4</td><td>880x796x330mm</td><td>UMF30C2E4</td><td>880x796x330mm</td></tr>
<tr><td rowspan="11">Noise</td><td rowspan="9">Indoor Unit</td><td>MH023FPEA
MH026FPEA</td><td>40dB↓</td><td rowspan="3">AMF09C2E</td><td rowspan="3">39dB↓</td></tr>
<tr><td>MH035FPEA</td><td>42dB↓</td></tr>
<tr><td>MH052FPEA✳</td><td>48dB↓</td></tr>
<tr><td>MH023FWEA
MH026FWEA
MH035FWEA</td><td>40dB↓</td><td rowspan="3">AMF12C2E</td><td rowspan="3">43dB↓</td></tr>
<tr><td>MH052FWEA</td><td>48dB↓</td></tr>
<tr><td>MH026FKEA
MH035FKEA</td><td>40dB↓</td></tr>
<tr><td>MH023FEEA
MH026FEEA
MH035FEEA</td><td>45dB↓</td><td rowspan="2">AMF18C2E</td><td rowspan="2">46dB↓</td></tr>
<tr><td>MH052FDEA</td><td>43dB↓</td></tr>
<tr><td>Outdoor Unit</td><td>MH068FXEA4
MH080FXEA4</td><td>58dB↓(Cooling)/
59dB↓(Heating)</td><td>UMF30C2E4</td><td>62dB↓</td></tr>
<tr><td colspan="2" rowspan="2">The Feature of Product</td><td colspan="2">Free Joint Multi(Variable Indoor Unit)
(ex. 4RAC, 2RAC+1-WAY+DUCT, etc)</td><td colspan="2">Only 4RAC Indoor Unit</td></tr>
<tr><td colspan="2">BLDC INVERTER COMPRESSOR</td><td colspan="2">SINGLE ROTARY COMPRESSOR</td></tr>
</table>

The Comparative Specifications of Product(cont.)

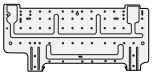
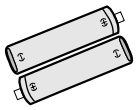
<table>
<tr><th colspan="2">Item</th><th colspan="2">MH30VP2X
MH30VW2X</th><th colspan="2">MH26AP2X</th></tr>
<tr><td rowspan="4">Design</td><td>Indoor Unit</td><td colspan="2"><MH30VP2-✳✳>

<MH30VW2-✳✳>
 </td><td colspan="2">  </td></tr>
<tr><td>Outdoor Unit</td><td colspan="2"> </td><td colspan="2">  </td></tr>
<tr><td rowspan="3">Net Weight</td><td rowspan="2">Indoor Unit</td><td>MH30VP2-09</td><td>7.5kg</td><td rowspan="2">MH26AP2-07</td><td rowspan="2">7.5kg</td></tr>
<tr><td>MH30VP2-12</td><td>8.5kg</td></tr>
<tr><td>MH30VW2-09
MH30VW2-12</td><td>9.0kg</td><td>MH26AP2-12</td><td>8.5kg</td></tr>
<tr><td>Outdoor Unit</td><td>MH30VP2X
MH30VW2X</td><td>72.0kg</td><td>MH26AP2X</td><td>71.0kg</td></tr>
<tr><td rowspan="3">Outer Dimension</td><td rowspan="2">Indoor Unit</td><td>MH30VP2-09</td><td>795x258x179mm</td><td rowspan="2">MH26AP2-07</td><td rowspan="2">795x258x179mm</td></tr>
<tr><td>MH30VP2-12</td><td>890x285x179mm</td></tr>
<tr><td>MH30VW2-09
MH30VW2-12</td><td>950x268x165mm</td><td>MH26AP2-12</td><td>890x285x179mm</td></tr>
<tr><td>Outdoor Unit</td><td>MH30VP2X
MH30VW2X</td><td>880x796x330mm</td><td>MH26AP2X</td><td>1,000x790x310mm</td></tr>
<tr><td rowspan="3">Noise</td><td rowspan="2">Indoor Unit</td><td>MH30VP2-09</td><td>40dB↓</td><td rowspan="2">MH26AP2-07</td><td rowspan="2">36dB↓</td></tr>
<tr><td>MH30VP2-12</td><td>42dB↓</td></tr>
<tr><td>MH30VW2-09
MH30VW2-12</td><td>40dB↓</td><td>MH26AP2-12</td><td>43dB↓</td></tr>
<tr><td>Outdoor Unit</td><td>MH30VP2X
MH30VW2X</td><td>58dB↓(Cooling)/
59dB↓(Heating)</td><td>MH26AP2X</td><td>60dB↓</td></tr>
<tr><td colspan="2">The Feature of Product</td><td colspan="2">BLDC INVERTER COMPRESSOR</td><td colspan="2">2 ROTARY COMPRESSOR</td></tr>
</table>

2-5 Accessory and Option Specifications

2-5-1 Indoor Unit Accessories

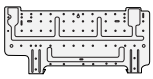
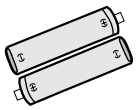
■ **MH✳✳✳FPEA✳/MH✳✳VP2-✳✳**

Item	Descriptions	Code-No.	Q'TY	Remark
	Installation Plate (Plate-Hanger)	DB70-00288A (MH020FPEA/MH023FPEA/MH026FPEA/ MH✳✳VP2-07/MH✳✳VP2-09)	1	Indoor Unit
		DB70-00276A (MH035FPEA/MH✳✳VP2-12)		
		DB70-00295A (MH052FPEA/MH052FPEA1)		
	Remote Control	DB93-03016N	1	
	Wired remote Controller cables	DB39-00943D C/W COMM2	1	
		DB39-01047A Connect wire		
	Batteries for Remote Control	DB47-90024A	2	
	User's Manual	DB98-20234A (MH✳✳✳FPEA✳)	1	
		DB98-23002A (MH✳✳VP2-✳✳)		
	Installation Manual	DB98-20238A (MH✳✳✳FPEA✳)	1	
		DB98-23001A (MH✳✳VP2-✳✳)		

✳ The design and shape can be changed according to the model.

Indoor Unit Accessories(cont.)

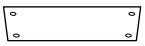
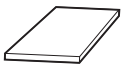
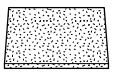
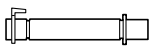
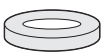
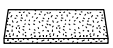
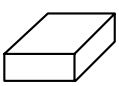
■ **MH✳✳✳FWEA/MH✳✳VW2-✳✳**

Item	Descriptions	Code-No.	Q'TY	Remark
	Installation Plate (Plate-Hanger)	DB70-00514A (MH023FWEA/MH026FWEA/ MH035FWEA/MH✳✳VW2-✳✳)	1	Indoor Unit
		DB70-00536A (MH052FWEA)		
	Remote Control	DB93-03016R	1	
	Wired remote Controller cables	DB39-00943D C/W COMM2	1	
		DB39-01047A Connect wire		
	Batteries for Remote Control	DB47-90024A	2	
	User's Manual	DB98-24190A (MH✳✳✳FWEA)	1	
		DB98-24205A (MH✳✳VW2-✳✳)		
	Installation Manual	DB98-24189A (MH✳✳✳FWEA)	1	
		DB98-24204A (MH✳✳VW2-✳✳)		

✳ The design and shape can be changed according to the model.

Indoor Unit Accessories(cont.)

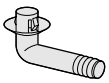
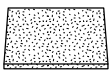
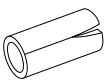
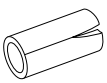
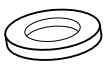
■ **MH✳✳✳FKEA**

Item	Descriptions	Code-No.	Q'TY	Remark
	Pattern sheet (Pad Install)	DB69-00495A	1	Indoor Unit
	Insulation refrigerant pipe (Insulation-joint out)	DB72-00401C	2	
	Insulation cover drain	DB62-01959A	1	
	User's Manual	DB98-20235A	1	
	Installation Manual	DB98-20239A	1	
	Flexible hose (Ass'y Holder Pipe)	DB94-00281B	1	
	Insulation drain	DB62-01960B	1	
	Rubber (Grommet Hanger)	DB63-00237A	8	
	Insulation cover band	DB72-00109J	1	
	Wireless remote controller box	DB97-00387F	1	

✳ The design and shape can be changed according to the model.

Indoor Unit Accessories(cont.)

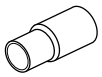
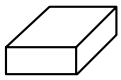
■ **MH✳✳✳FDEA**

Item	Descriptions	Code-No.	Q'TY	Remark
	User's Manual	DB98-20236A	1	Indoor Unit
	Installation Manual	DB98-20240A	1	
	Pattern Sheet	DB69-00168A/B	1	
	Drain Plug	DB67-20011A	1	
	Insulation Drain	DB72-00109G	8	
	Insulation Cover Pipe	DB72-00109F	2	
	Insulation Pipe	DB72-00143D	2	
	Insulation Drain Pipe	DB72-00143G	1	
	Nut	DB60-30028A	8	
	Rubber (Grommet Hanger)	DB63-00237A	8	

✳ The design and shape can be changed according to the model.

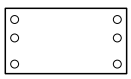
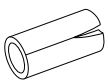
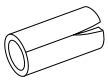
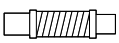
Indoor Unit Accessories(cont.)

■ **MH✳✳✳FDEA(cont.)**

Item	Descriptions	Code-No.	Q'TY	Remark
	Cable-tie	DB65-10088C	4	Indoor Unit
	Drain Socket	DB67-00111A	1	
	Wired remote controller Box	DB97-01904G	1	

✳ The design and shape can be changed according to the model.

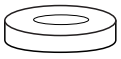
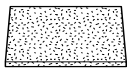
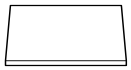
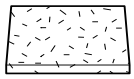
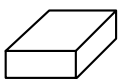
■ **MH✳✳✳FEEA**

Item	Descriptions	Code-No.	Q'TY	Remark
	User's Manual	DB98-24374A	1	Indoor Unit
	Installation Manual	DB98-24373A	1	
	Pattern Sheet	DB97-03906A/B	1	
	Insulation-Install Outlet	DB72-00143D	1	
	Insulation-Install Inlet	DB72-00143E	1	
	Drain Hose Joint	DB94-00758A	1	

✳ The design and shape can be changed according to the model.

Indoor Unit Accessories(cont.)

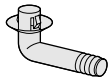
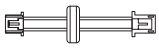
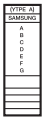
■ **MH✳✳✳FEEA(cont.)**

Item	Descriptions	Code-No.	Q'TY	Remark
	Rubber (Grommet Hanger)	DB63-00237A	8	Indoor Unit
	Insulation-Drain Out	DB62-03439H	1	
	Insulation-Out	DB62-03439J	2	
	Insulation-Drain In	DB62-03440H	1	
	Cable-tie	DB65-10088C	8	
	Drain Pipe Holder	DB90-02064A	2	
	Wired remote controller Box	DB97-01904G	1	

✳ The design and shape can be changed according to the model.

2-5-2 Outdoor Unit Accessories

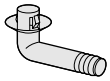
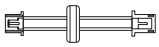
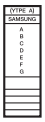
■ **MH040FXEA2/MH052FXEA2/MH14VP2X/MH16VP2X/MH18VP2X/MH19VP2X/MH14VW2X/MH16VW2X/MH18VW2X/MH19VW2X**

Item	Descriptions	Code-No.	Q'TY	Remark
	Drain Plug Out	DB67-20011A	1	Outdoor Unit
	Transmitter power cable (Ass'y Connector Wire-DC Power)	DB93-03011B	1	
	Energy Label (Ass'y-Label Energy)	DB98-21848S (MH040FXEA2)	1	
		DB98-24514C (MH052FXEA2)		
		DB98-21848K (MH14VP2X)		
		DB98-21848L (MH16VP2X)		
		DB98-21848E (MH18VP2X)		
		DB98-21848F (MH19VP2X)		
		DB98-21848M (MH14VW2X)		
		DB98-21848N (MH16VW2X)		
		DB98-21848P (MH18VW2X)		
		DB98-21848Q (MH19VW2X)		
	Rubber Leg	DB73-20134A	4	
	Flare Nuts, 6.35mm outer pipe diameter	DB60-30010A	1	
	Flare Nuts, 9.52mm outer pipe diameter	DB60-30010B	1	
	Installation Manual	DB98-24372A (MH040FXEA2/MH052FXEA2)	1	
		DB98-24375A (MH✳✳VP2X/MH✳✳VW2X)		

✳ The design and shape can be changed according to the model.

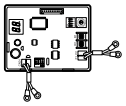
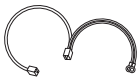
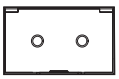
Outdoor Unit Accessories(cont.)

■ MH068FXEA4/MH080FXEA4/MH30VP2X/MH30VW2X

Item	Descriptions	Code-No.	Q'TY	Remark
	Drain Plug Out	DB67-20011A	2	Outdoor Unit
	Transmitter power cable (Ass'y Connector Wire-DC Power)	DB93-03011B	1	
	Energy Label (Ass'y-Label Energy)	DB98-24514B (MH068FXEA4)	1	
		DB98-24514A (MH080FXEA4)		
		DB98-21848J (MH30VP2X)		
		DB98-21848R (MH30VW2X)		
	Rubber Leg	DB73-20134A	4	
	Flare Nuts, 6.35mm outer pipe diameter	DB60-30010A	1	
	Flare Nuts, 9.52mm outer pipe diameter	DB60-30010B	1	
	Nipple Connector	DB67-00332A	2	
	Installation Manual	DB98-24372A (MH068FXEA4/MH080FXEA4)	1	
		DB98-24375A (MH30VP2X/MH30VW2X)		

✳ The design and shape can be changed according to the model.

2-5-3 Transmitter Unit Accessories : MIM-B04

Item	Descriptions	Code-No.	Q'TY	Remark
	Transmitter (Ass'y PCB-DVM Plus I/M)	DB93-01808C	1	Transmitter
	Transmitter Power cable (Wire Harness-DC Source)	DB39-00378D	1	
	Transmitter communication cable (Connect Wire-COM)	DB39-00253D	1	
	Case (Case-Relay PCB Out)	DB61-00450A	1	
	Cable-tie	DB65-10088B	3	
	Installation Manual	DB98-23121A	1	

✳ The design and shape can be changed according to the model.

3. Alignment and Adjustments

3-1 Error mode and check method

3-1-1 Indoor Unit

■ **MH✳✳✳FPEA✳/MH✳✳✳FWEA/MH✳✳VP2-✳✳/MH✳✳VW2-✳✳**

Display	Explanation	Main checking Point / Remark
E1↔01	Communication error (unable to receive data)	Communication cable connection
E1↔02	Communication error (outdoor cannot communicate)	Another indoor unit or indoor PCB
E1↔21	Indoor unit room temperature sensor error (Open/Short)	Room temperature sensor, indoor PCB
E1↔22	Indoor unit heat exchanger in temperature sensor error (Open/Short)	Heat exchanger in sensor, indoor PCB
E1↔23	Indoor unit heat exchanger out temperature sensor error (Open/Short)	Heat exchanger out sensor, indoor PCB
E1↔28	Indoor unit heat exchanger in temperature sensor detached	Heat exchanger in sensor
E1↔29	Indoor unit heat exchanger out temperature sensor detached	Heat exchanger out sensor
E1↔30	Indoor unit heat exchanger in & out temperature sensor detached	Heat exchanger in & out sensor
E1↔54	Indoor unit fan motor malfunction	Fan motor and cable
E1↔61	More than 2 indoor units cool and heat simultaneously	Another indoor unit operation mode
E1↔62	EEPROM error	Indoor PCB
E1↔63	Option code setting error	Option code
E1↔85	Cable miss-wiring	Cable connection (Indoor & Outdoor unit)
E2↔01	The number of indoor unit mismatched	Cable connection (another indoor unit & outdoor unit), SW01(outdoor)
E2↔51	Compressor discharge sensor error(Short/Open)	Outdoor unit
E5↔59	Outdoor unit error	Outdoor unit (Error code)

■ **MH✳✳✳FKEA**

Abnormal conditions	Indicators					Operating
	Green	Red				
Power reset	◑	×	×	×	×	
Error of temperature sensor in indoor unit (OPEN/SHORT)	×	×	◑	×	×	
Error of heat exchanger sensor in indoor unit Error of heat exchanger OUT sensor in indoor unit Error of outlet temperature sensor in indoor unit (OPEN/SHORT): For heat pump models only	◑	×	◑	×	×	
Error of mixed operation	×	◑	×	◑	×	
Error of indoor fan motor : Below 450RPM for 15 minutes	×	×	×	◑	×	
Error of outdoor temperature sensor Error of CONDENSER sensor Error of DISCHARGE sensor	◑	×	×	◑	×	
1. No communication for 2 minutes between indoor unit and outdoor unit (communication error for more than 2 minutes) 2. Indoor unit receiving the communication error from outdoor unit 3. Outdoor unit tracking 3 minutes error 4. When sending the communication error from outdoor unit due to the mismatching of the communication numbers and installed numbers after completion of tracking (communication error for more than 2 minutes)	×	×	◑	◑	×	Error of indoor unit: Displayed on the indoor unit regardless of operation
1. 2nd detection of refrigerant completely leak 2. 2nd detection of high temperature CONDENSER 3. 2nd detection of high temperature DISCHARGE 4. Compressor down due to 6th detection of freezing	×	×	◑	◑	◑	Displayed on appropriate indoor unit which is operating Displayed on outdoor unit
Error of float switch	×	×	×	◑	◑	
Error of setting option switches for optional accessories	×	×	◑	×	◑	
EEPROM error	◑	×	◑	◑	×	
EEPROM option error	◑	◑	◑	◑	◑	

● : On ◑ : Flickering × : Off

◆ If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

■ MH✳✳✳FDEA/MH✳✳✳FEEA

The error indicated on the LED display of Indoor unit

Abnormal conditions	Indicators					Operating
	Concealed Type					
	Blue	Red				
	Standard Type					
Power reset	◑	×	×	×	×	
Error of temperature sensor in indoor unit(OPEN/SHORT)	×	×	◑	×	×	Displayed on appropriate indoor unit which is operating
Error of heat exchanger sensor in indoor unit Error of heat exchanger OUT sensor in indoor unit Error of outlet temperature sensor in indoor unit (OPEN/SHORT): For heat pump models only	◑	×	◑	×	×	Displayed on appropriate indoor unit which is operating
Error of mixed operation	×	◑	×	◑	×	
Error of outdoor temperature sensor Error of COND sensor Error of DISCHARGE sensor	◑	×	×	◑	×	Displayed on appropriate indoor unit which is operating Displayed on outdoor unit
1. No communication for 2 minutes between indoor unit and outdoor unit (communication error for more than 2 minutes) 2. Indoor unit receiving the communication error from outdoor unit 3. Outdoor unit tracking 3 minutes error 4. When sending the communication error from outdoor unit the mismatching of the communication numbers and installed numbers after completion of tracking. (communication error for more than 2 minutes)	×	×	◑	◑	×	1. Error of indoor unit : Displayed on the indoor unit regardless of operation 2. Error of outdoor unit : Displayed on the indoor unit which is operating
Self-diagnostic error (including the indoor unit not detected) 1. Error of electronic expansion valve close 2. Error of electronic expansion valve open 3. Breakaway of EVA OUT sensor 4. Breakaway of EVA IN sensor	×	×	◑	◑	◑	Displayed on appropriate indoor unit which is operating Displayed on outdoor unit

● : On ◑ : Flickering × : Off

◆ If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

◆ If you re-operate the air conditioner, it operates normally at first, then detect an error again.

■ MH✳✳✳FDEA/MH✳✳✳FEEA(cont.)

The error indicated on the LED display of Indoor unit

Abnormal conditions	Indicators					Operating
	Concealed Type					
	Blue	Red				
	Standard Type					
5. Breakaway of COND MID sensor 6. 2nd detection of refrigerant completely leak 7. 2nd detection of high temperature COND 8. 2nd detection of high temperature DISCHARGE 9. COMP DOWN due to 2nd detection of low pressure switch 10. Error of reverse phase 11. Compressor down due to 6th detection of freezing 12. Self-diagnosis of condensation sensor (G8, G9) 13. Compressor down due to condensation ratio control	×	×	◑	◑	◑	Displayed on appropriate indoor unit which is operating Displayed on outdoor unit
Error of float switch	×	×	×	◑	◑	
Error of setting option switches for optional accessories	×	×	◑	×	◑	
EEPROM error	◑	×	◑	◑	×	
EEPROM option error	◑	◑	◑	◑	◑	

● : On ◑ : Flickering × : Off

◆ If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

◆ If you re-operate the air conditioner, it operates normally at first, then detect an error again.

3-1-2 Outdoor Unit

Display		Explanation	Main checking Point
E1	01	Communication error (indoor unable to receive data)	Communication cable connection
E1	02	Communication error (outdoor unable to communicate)	Indoor unit
E1	21	Indoor unit room temperature sensor error (Open/Short)	Indoor unit
E1	22	Indoor unit heat exchanger in temperature sensor error (Open/Short)	Indoor unit
E1	23	Indoor unit heat exchanger out temperature sensor error (Open/Short)	Indoor unit
E1	28	Indoor unit sensor error - Evaporator pipe in sensor detached	Indoor unit
E1	29	Indoor unit sensor error - Evaporator pipe out sensor detached	Indoor unit
E1	30	Indoor unit heat exchanger in & out temperature sensor detached	Indoor unit
E1	61	More than 2 indoor units cool and heat simultaneously	Indoor unit operation mode
E2	01	The number of indoor unit mismatched	Communication wiring
E2	02	Communication error (outdoor unable to receive data)	Communication wiring
E2	03	Communication error between 2 microcontroller on the outdoor PCB	Outdoor unit PCB
E2	21	Outdoor temperature sensor error (Short/Open) – Error level : over 4.9V(-50˚C) under 0.4V(93˚C)	Temperature sensor
E2	37	Condenser temperature sensor error (Short/Open) – Error level : over 4.9V(-50˚C) under 0.4V(93˚C)	Temperature sensor
E2	46	Condenser temperature sensor detached	Temperature sensor
E2	60	Compressor discharge sensor error (Short/Open) – Error check condition : outdoor temperature over -20˚C – Error level : over 4.95V(-30˚C) under 0.5V(151˚C)	Temperature sensor
E2	61	Compressor discharge sensor detached	Temperature sensor
E3	20	Compressor OLP sensor error (Short/Open) – Error check condition : outdoor temperature over -20˚C – Error level : over 4.95V(-30˚C) under 0.5V(151˚C)	Temperature sensor
E4	01	Indoor unit heat exchanger freezing and compressor stop (cooling mode)	Check pipe matching also(indoor-outdoor)
E4	04	Outdoor unit overload and compressor stop (protection control in heating mode)	Check pipe matching also(indoor-outdoor)
E4	16	Outdoor unit high discharge temperature and compressor stop (protection control in heating mode)	Check pipe matching also(indoor-outdoor)

Outdoor Unit(cont.)

Display		Explanation	Main checking Point
E4	19	Outdoor unit EEV open error (self diagnosis)	EEV
E4	22	Outdoor unit EEV close error (self diagnosis)	EEV
E4	40	High temperature (over 30˚C) of outdoor as heating mode	Operation mode
E4	41	Low temperature (under -5˚C) of indoor as cooling mode	Operation mode
E4	60	Wrong connection between communication and power cable	Wiring indoor and outdoor
E4	61	Inverter Compressor starting failure (5 times)	Service valve, EEV, Compressor terminal, Compressor wire, Outdoor controller
E4	62	Compressor trip by input current limit control	EEV, Gas over charge, Outdoor controller
E4	63	Compressor trip by OLP temperature limit control	Outdoor fan, Compressor, Outdoor controller
E4	64	Compressor peak current protection	Outdoor fan, Compressor, Compressor wire, Outdoor controller
E4	65	Compressor overload protection by current	Outdoor fan, EEV, Service valve, Outdoor controller
E4	66	DC-link voltage error (under 150V or over 410V) (This error might display for a few seconds after power cut)	Power voltage, Outdoor controller
E4	67	Compressor rotation error	Compressor terminal, Compressor wire, Outdoor controller
E4	68	Current sensor error	Outdoor controller
E4	69	DC-link voltage sensor error	Outdoor controller
E4	70	Compressor overload protection	Outdoor fan, EEV, Service valve, Outdoor controller
E4	71	EEPROM error	Outdoor controller
E4	72	AC line zero-crossing detection circuit error	Outdoor controller, Terminal Block
E5	54	NO GAS error (self diagnosis)	Piping (gas leak)

3-2 Setting Option Setup Method

■ MH✳✳✳FPEA✳/MH✳✳VP2-✳✳

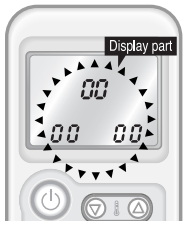
ex) Option No. : 066064- 170373

Step 1 : **Enter the Option Setup mode.**

1st Take out the batteries of remote control.

2nd Press the temperature (▽ ▲) button simultaneously and insert the battery again.

3rd Make sure the remote control display shown as 00 00 00 .



Step 2 : **Enter the Option Setup mode and select your option according to the following procedure.**

✳ Setting is not required if you must 0 a value which has a 0 default.

1

The default value is 00 00 00 .
Otherwise, push the Mode button to 0 .
Every time you push the button, the display panel reads 1 or 0 repeatedly.

2

Push the (▲) button to set the display panel to 6 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

3

Push the (▽) button to set the display panel to 6 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

4

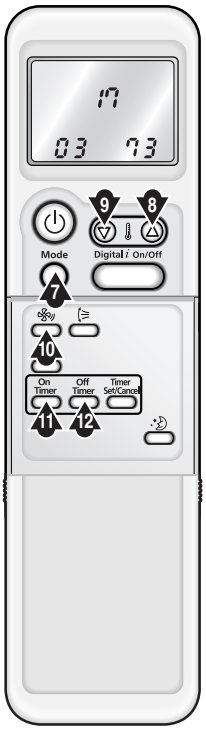
Push the button to set the display panel to 0 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

5

Push the On Timer button to set the display panel to 6 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

6

Push the Off Timer button to set the display panel to 4 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.



✳ Setting is not required if you must 0 a value which has a 0 default.

7 Press Mode button, then the default value is 10.

8 Push the ▲ button to set the display panel to 7.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

9 Push the ▼ button to set the display panel to 0.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

10 Push the button to set the display panel to 3.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

11 Push the On Timer button to set the display panel to 7.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

12 Push the Off Timer button to set the display panel to 3.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

Step 3 : Upon completion of the selection, check you made right selections.

Press the Mode Selection key, Mode to set the display part to 0 and check the display part.

➡ The display part shows 06 / 60 64.

Press the Mode Selection key, Mode to set the display part to 1 and check the display part.

➡ The display part shows 17 / 03 73.

Step 4 : Pressing the ON/OFF button (⏻)

When pressing the operation ON/OFF key with the direction of remote control for unit, the sound "Ding" or "Diriring" is heard and the OPERATION ICON(≋) lamp of the display is flickering at the same time, then the input of option is completed. (If the diriring sound isn't heard, try again pressing the ON/OFF button.)

Step 5 : Unit operation test-run

First, Remove the battery from the remote control.

Second, Re-insert the battery into the remote control.

Third, Press ON/OFF key with the direction of remote control for set.

• Error Mode

1st If all lamps of indoor unit are flickering, plug out, plug in power plug again and press the ON/OFF key to retry.

2nd If the unit is not working properly or all lamps are continuously flickering after setting the option code, see if the correct option code is set up for its model.

■ MH✳✳✳FWEA/MH✳✳VW2-✳✳

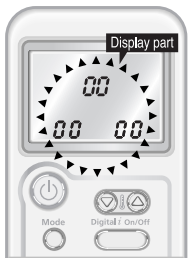
ex) Option No. : 066064- 170373

Step 1 : **Enter the Option Setup mode.**

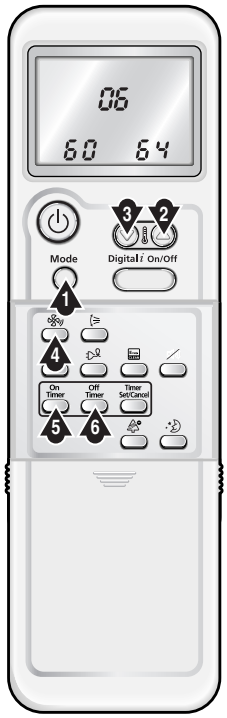
1st Take out the batteries of remote control.

2nd Press the temperature button simultaneously and insert the battery again.

3rd Make sure the remocon display shown as 00 00 00.



Step 2 : **Enter the Option Setup mode and select your option according to the following procedure.**



✳ Setting is not required if you must 0 a value which has a 0 default.

1

The default value is 00 00 00.
Otherwise, push the Mode button to 0.
Every time you push the button, the display panel reads 1 or 0 repeatedly.

2

Push the ▲ button to set the display panel to 6.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

3

Push the ▼ button to set the display panel to 6.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

4

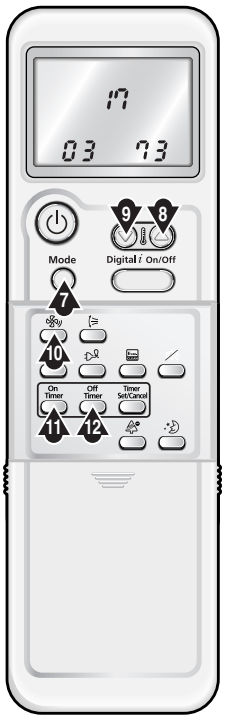
Push the button to set the display panel to 0.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

5

Push the On Timer button to set the display panel to 6.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

6

Push the Off Timer button to set the display panel to 4.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.



✳ Setting is not required if you must 0 a value which has a 0 default.

7 Press Mode button, then the default value is 00 10 00 .

8 Push the button to set the display panel to 7.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

9 Push the button to set the display panel to 0.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

10 Push the button to set the display panel to 3.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

11 Push the On Timer button to set the display panel to 7.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

12 Push the Off Timer button to set the display panel to 3.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

Step 3 : Upon completion of the selection, check you made right selections.

Press the Mode Selection key, Mode to set the display part to 0 and check the display part.

➡ The display part shows 60 06 64 .

Press the Mode Selection key, Mode to set the display part to 1 and check the display part.

➡ The display part shows 03 17 73 .

Step 4 : Pressing the ON/OFF button ( )

When pressing the operation ON/OFF key with the direction of remote control for unit, the sound "Ding" or "Diriring" is heard and the OPERATION ICON( ) lamp of the display is flickering at the same time, then the input of option is completed. (If the diriring sound isn't heard, try again pressing the ON/OFF button.)

Step 5 : Unit operation test-run

First, Remove the battery from the remote control.

Second, Re-insert the battery into the remote control.

Third, Press ON/OFF key with the direction of remote control for set.

• Error Mode

1st If all lamps of indoor unit are flickering, plug out, plug in power plug again and press the ON/OFF key to retry.

2nd If the unit is not working properly or all lamps are continuously flickering after setting the option code, see if the correct option code is set up for its model.

■ MH✳✳✳FKEA/MH✳✳✳FDEA/MH✳✳✳FEEA

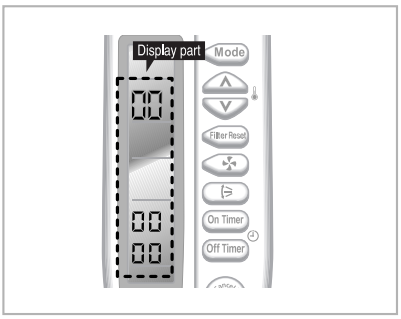
ex) Option No. : 085115-1d2340

Step 1 : **Enter the Option Setup mode.**

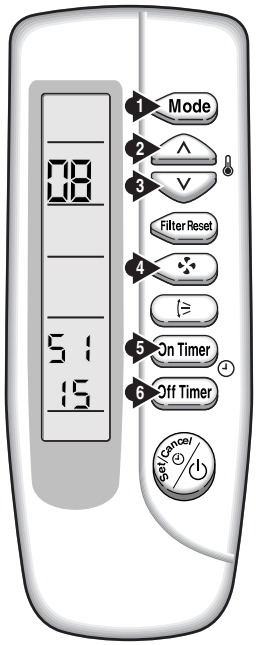
1st Take out the batteries of remote control.

2nd Press the temp. button simultaneously and insert the battery again.

3rd Make sure the remote control display shown as 00 00 00 .



Step 2 : **Enter the Option Setup mode and select your option according to the following procedure.**



✳ Setting is not required if you must 0 a value which has a 0 default.

1

The default value is 00 00 00 .
Otherwise, push the Mode button to 0 .
Every time you push the button, the display panel reads 1 or 0 repeatedly.

2

Push the button to set the display panel to 8 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

3

Push the button to set the display panel to 5 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

4

Push the button to set the display panel to 1 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

5

Push the On Timer button to set the display panel to 1 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

6

Push the Off Timer button to set the display panel to 5 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

✳ Setting is not required if you must 0 a value which has a 0 default.

7 Press Mode button, then the default value is 25 .

8 Push the ∧ button to set the display panel to d .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

9 Push the ∨ button to set the display panel to 2 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

10 Push the button to set the display panel to 3 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

11 Push the On Timer button to set the display panel to 4 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

12 Push the Off Timer button to set the display panel to 0 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ ··· 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

Step 3 : Upon completion of the selection, check you made right selections.

Press the Mode Selection key, Mode to set the display part to 0 and check the display part.

➡ The display part shows 08 .

Press the Mode Selection key, Mode to set the display part to 1 and check the display part.

➡ The display part shows 12 .

Step 4 : Pressing the ON/OFF button ( )

When pressing the operation ON/OFF key with the direction of remote control for unit, the sound "Ding" or "Diriring" is heard and the OPERATION ICON( ) lamp of the display is flickering at the same time, then the input of option is completed. (If the diriring sound isn't heard, try again pressing the ON/OFF button.)

Step 5 : Unit operation test-run

First, Remove the battery from the remote control.

Second, Re-insert the battery into the remote control.

Third, Press ON/OFF button( ) with the direction of remote control for set.

• Error Mode

1st If all lamps of indoor unit are flickering, Plug out, plug in power plug again and press ON/OFF key to retry.

2nd If the unit is not working properly or all lamps are continuously flickering after setting the option code, see if the correct option code is set up for its model.

■ Table of the option code

MODEL	OPTION CODE
MH020FPEA MH14VP2-07 MH16VP2-07 MH19VP2-07	0d7400-13223F
MH023FPEA MH026FPEA MH16VP2-09 MH18VP2-09 MH30VP2-09	0d6400-142351
MH035FPEA MH19VP2-12 MH30VP2-12	0d7404-162362
MH052FPEA MH052FPEA1	0d5408-192351
MH023FWEA MH026FWEA MH14VW2-07 MH16VW2-07 MH16VW2-09 MH18VW2-09 MH19VW2-07 MH30VW2-09	0E8400-142228
MH035FWEA MH19VW2-12 MH30VW2-12	0E7400-16226E
MH052FWEA	0E5404-19225F
MH026FKEA	005600-14221d
MH035FKEA	005600-162340
MH052FDEA	015200-190000

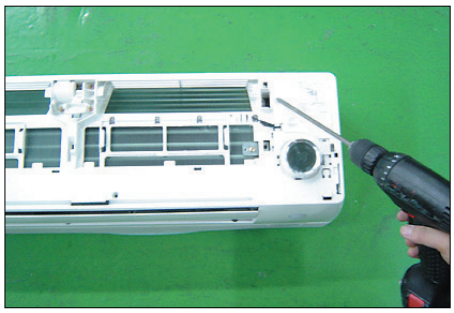
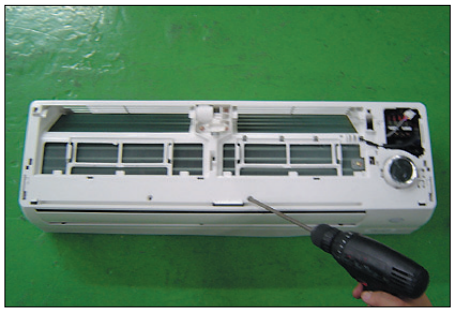
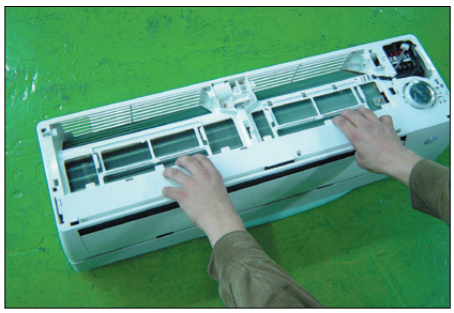
External Static Pressure (mmAq)	1.0	2.0(Standard)	3.0	4.0
MH023FEEA MH026FEEA	015201-1400Fb	015201-14020c	015201-140360	015201-1403E6
MH035FEEA	015201-16025d	015201-16026E	015201-1603c4	015203-16014c

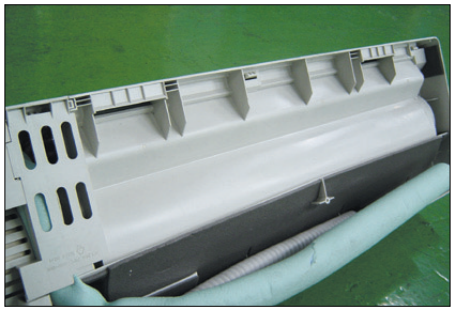
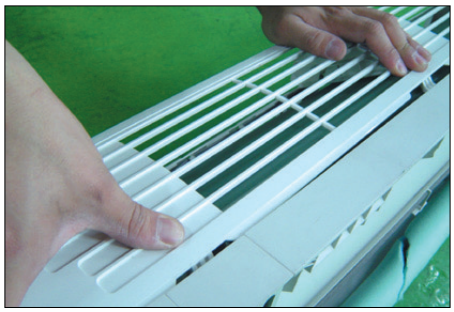
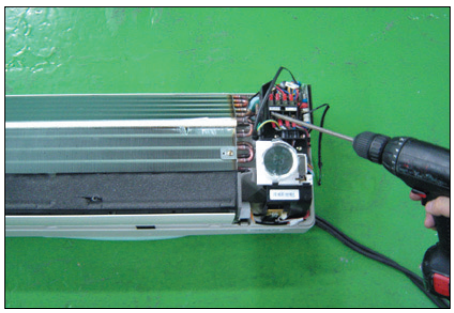
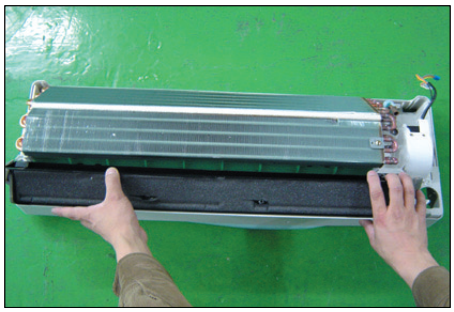
4. Disassembly and Reassembly

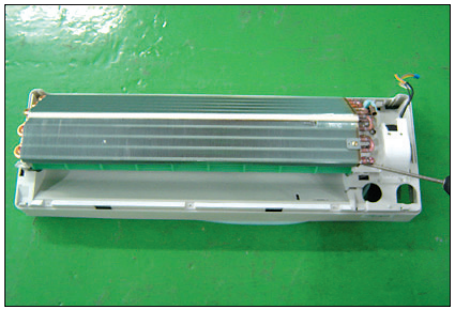
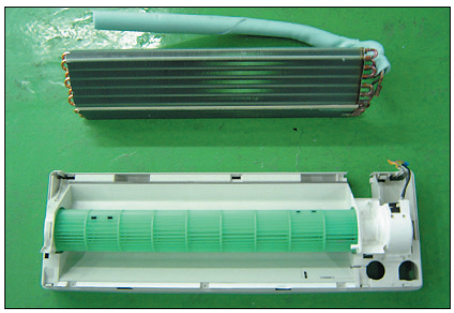
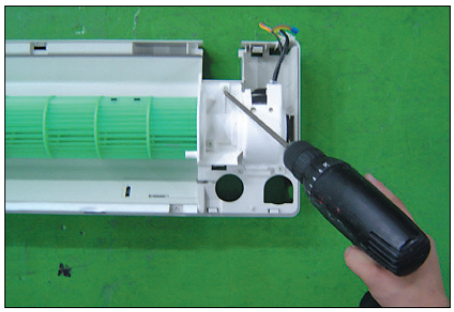
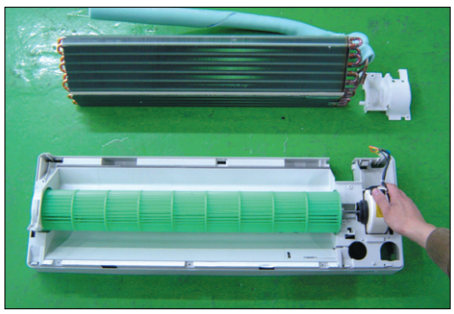
Stop operation of the air conditioner and remove the power cord before repairing the unit.

4-1 Indoor Unit

4-1-1 MH✳✳✳FPEA✳/MH✳✳VP2-✳✳

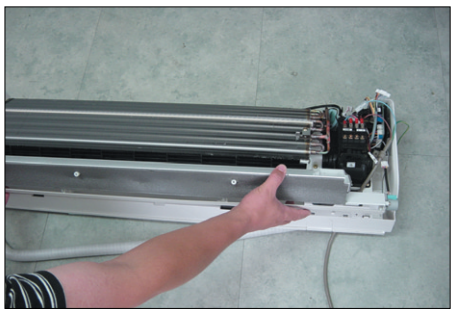
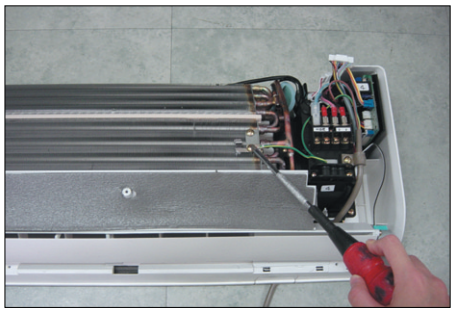
No	Parts	Procedure	Remark
1	Front Panel	1) Stop the air conditioner operation and shut off the main power. 2) Detach tape of Front Panel upper.	
		3) Slide the lower Front Grille down, then disassemble it by pulling it forwards. 4) Open the upper Front Grille by pulling right and left sides of the Grille. 5) Take the left and right Filter out. 6) Loosen one of the right screw and detach the Terminal Cover. 7) Detach the thermistor from the Front Grille.	
		8) Loosen 5 fixing screws of Front Grille.	
		9) Pull the lower left and right of discharge softly for the outside cover to be pulled out.	

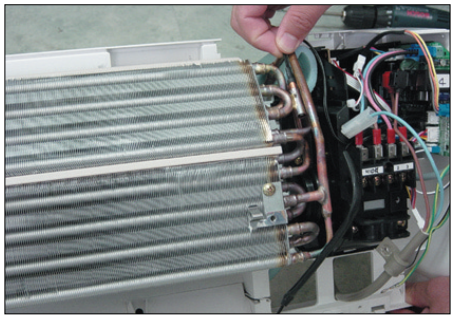
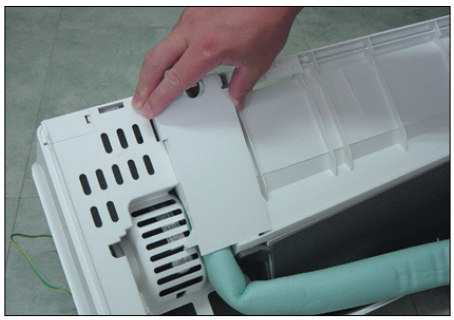
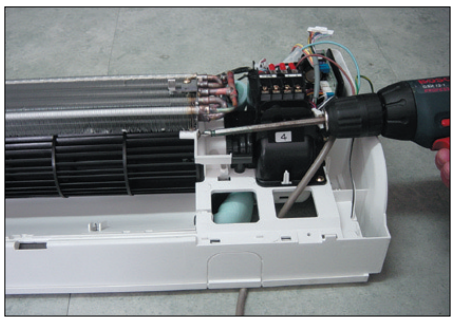
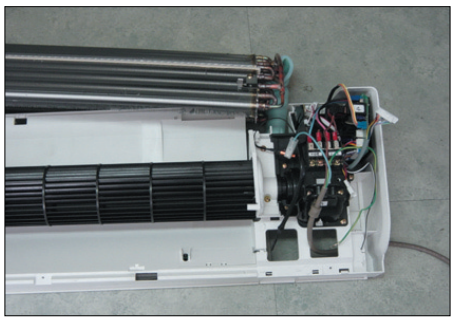
No	Parts	Procedure	Remark
		10) At first, press the left and center hook of the back side of the Panel Grille with the thumb to remove the hook. And press the right of the upper side of the Panel Grille with the fingers. And then disassemble the Panel Grille.	 
2	Electrical Parts (Main PCB)	1) Take all the connector of PCB upper side out.(Including Power Cord) 2) Detach the outdoor unit connection wire from the Terminal Block. 3) If pulling the main PCB up, it will be taken out.	
3	Tray Drain	1) Pull Tray Drain out from the Back Body.	

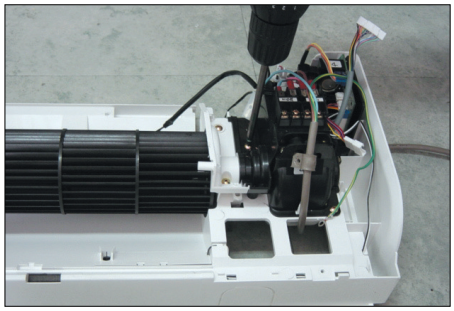
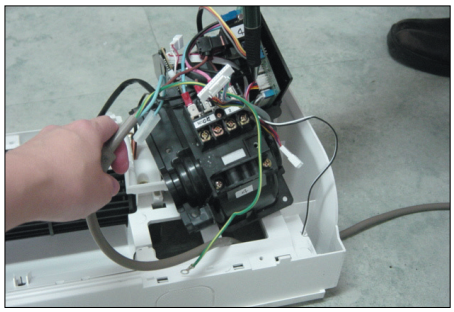
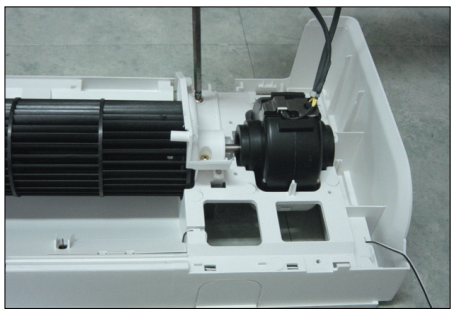
No	Parts	Procedure	Remark
4	Heat Exchanger	1) Loosen 2 fixing earth screws of right side. 2) Detach the Connection Pipe. 3) Detach the Holder Pipe at the rear side. 4) Loosen 3 fixing screws of right and left side.	
		5) Detach the Heat Exchanger from the indoor unit.	 
5	Fan Motor & Cross Fan	1) Loosen 2 fixing screws and detach the Motor Holder. 2) Loosen the fixing screw of Fan Motor. (with a M3 wrench) 3) Detach the Fan Motor from the Fan.	
		4) Detach the Fan from the left Holder Bearing.	

4-1-2 MH✳✳✳FWEA/MH✳✳VW2-✳✳

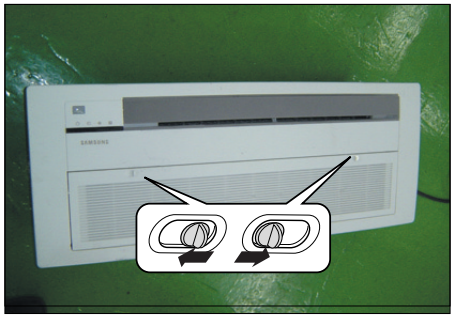
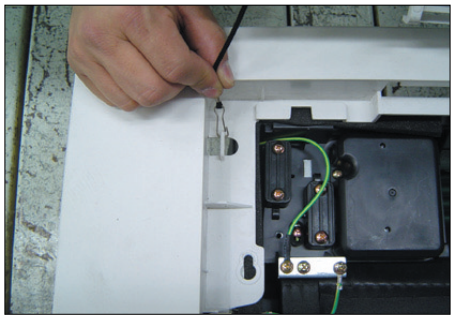
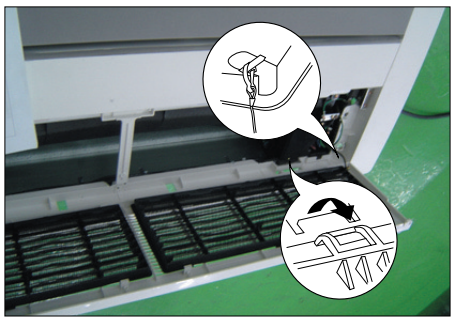
No	Parts	Procedure	Remark
1	Panel Front	1) Stop the air conditioner operation and shut off the main power.	
		2) Detach the Front Grille after pushing out it.	
		3) Loosen 1 of the right screw and detach the Ass'y display.	
		4) Loosen 1 of the right screw and detach the Terminal Cover. 5) Detach the cover PCB-DVM and thermistor from the Panel Front.	

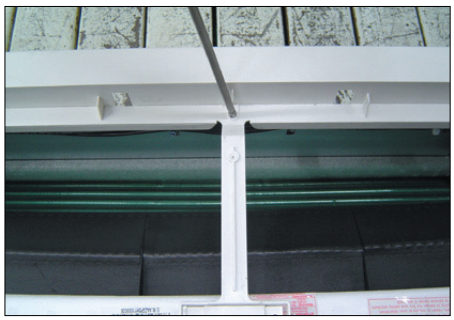
No	Parts	Procedure	Remark
		6) Loosen 5 fixing screws of Panel Front.	
		7) Unlock 2 hooks to fix Panel Front and Tray Drain. 8) Unlock 2 hooks to fix Panel Front and Back Body.	
2	Tray Drain	1) Detach the connected wire of Stepping Motor. 2) Pull Tray Drain out from the Back Body.	
3	Heat Exchanger	1) Loosen 1 fixing earth screw of right side.	

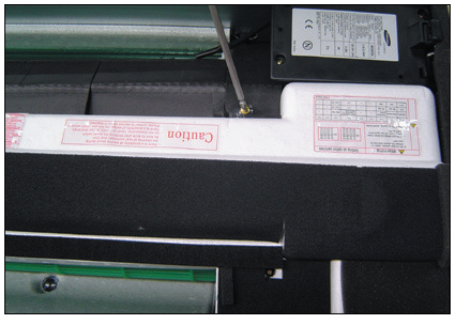
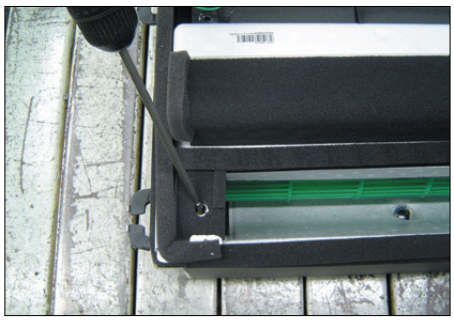
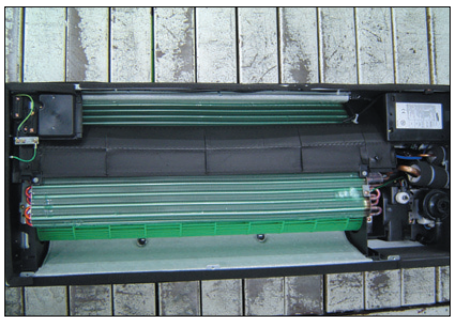
No	Parts	Procedure	Remark
		2) Detach the Room Sensor.	
		3) Detach the Holder Pipe at the rear side of the unit.	
		4) Loosen 3 fixing screws of left Holder Evap.	
		5) Loosen 1 fixing screw of right Holder Motor.	
		6) Detach the Heat Exchanger from the indoor unit.	

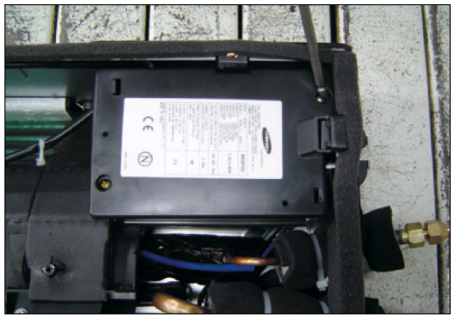
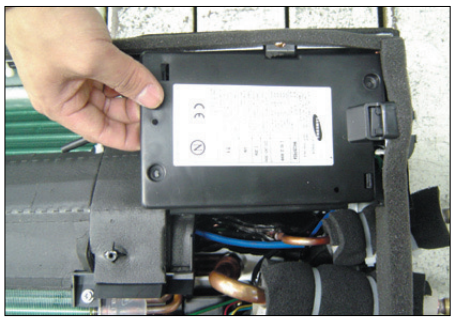
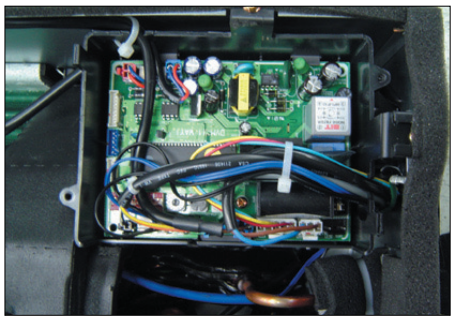
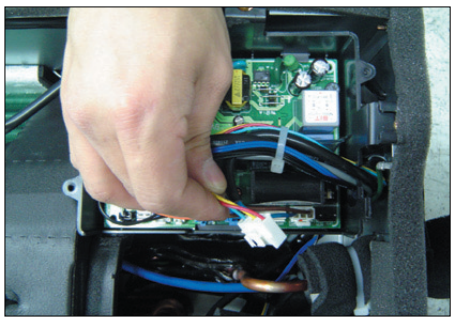
No	Parts	Procedure	Remark
4	Electrical Parts (Main PCB)	1) Loosen 4 fixing screws of right Holder control. 2) Take all the connector of PCB upper side out.(Including Power Cord) 3) Detach the outdoor unit connection wire from the Terminal Block. 4) Pull the PCB up to detach.	 
5	Fan Motor & Cross Fan	1) Loosen 2 fixing screws and detach the Motor Holder. 2) Loosen 1 fixing screw of Fan Motor. 3) Detach the Fan Motor from the Fan. 4) Detach the Fan from the left Holder Bearing.	

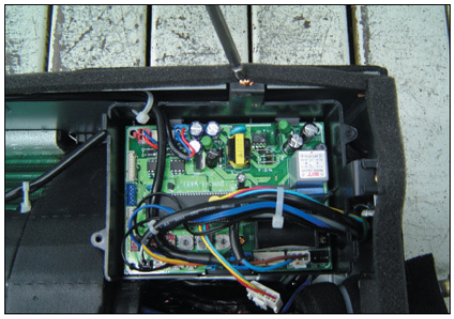
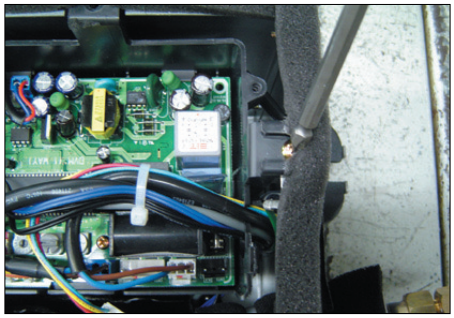
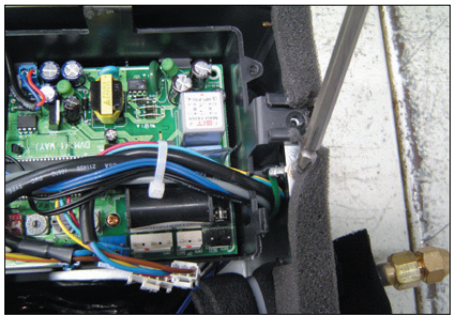
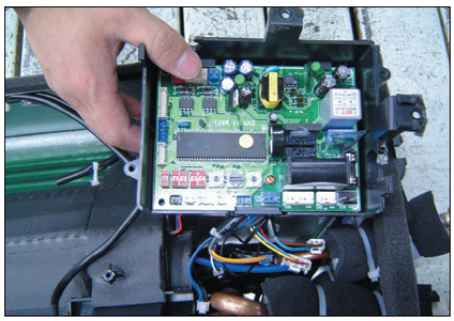
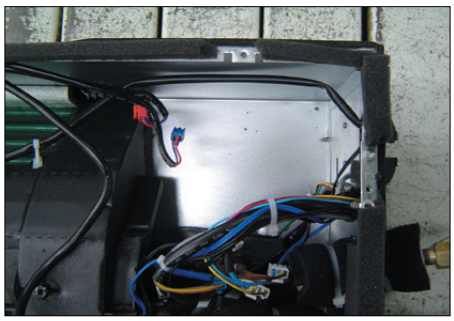
4-1-3 MH✳✳✳FKEA

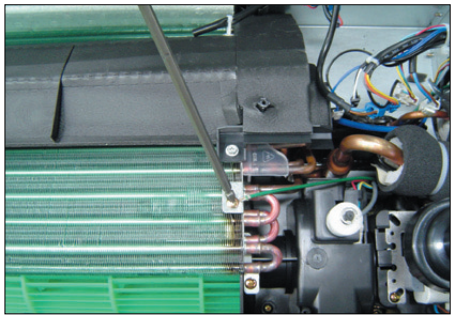
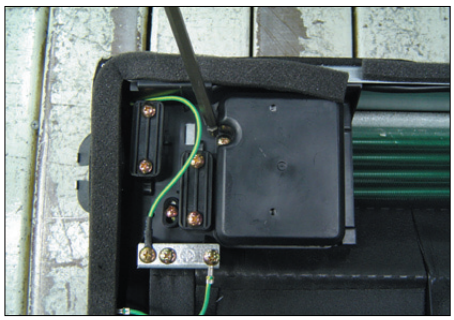
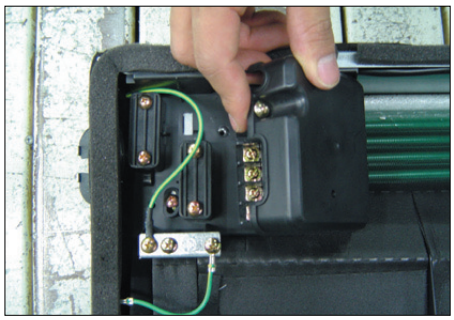
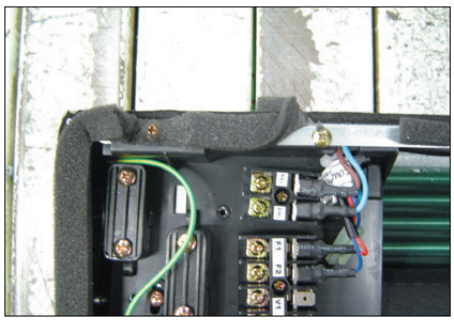
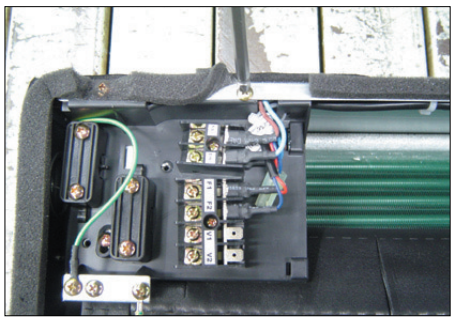
No	Parts	Procedure	Remark
1	Front Grille & Filter	1) Open the Front-Grille by pushing the tabs on the Grille. ⚠ You must give attention when disassembling the Front-Grille and must check the safety clips have been installed. If you don't ensure them, the Front Grille will drop suddenly and you will be hurt.	
		2) Detach the Front Grille. (1) Remove the safety clips. (2) Open the Front Grille about 45˚ and pull it forward.	 
		3) Pull out the Air-Filter.	

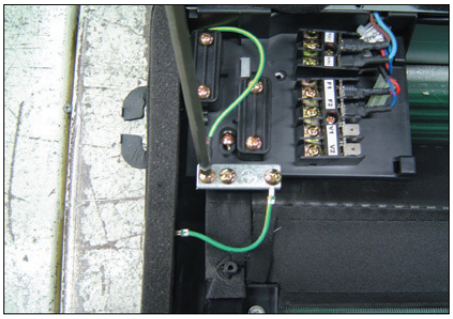
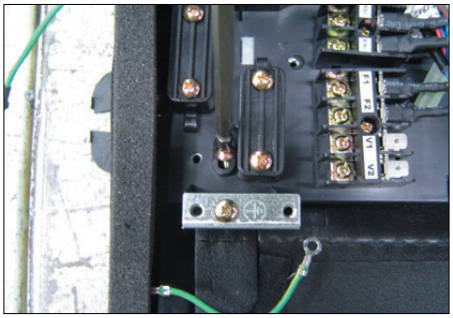
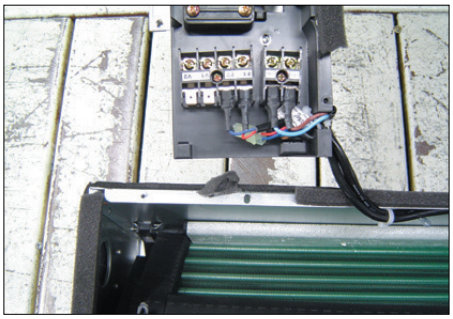
No	Parts	Procedure	Remark
2	Front Panel	1) Loosen 6 fixing screws holding the panel as shown picture.	
		2) Detach the Front-Panel pressing the 2 hooks on the both sides of the indoor unit.	

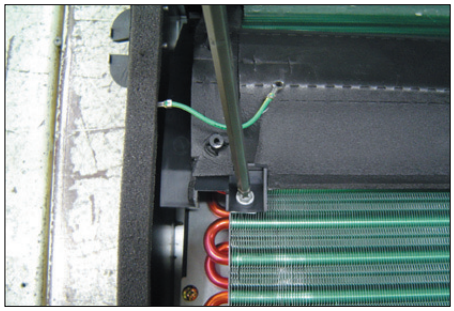
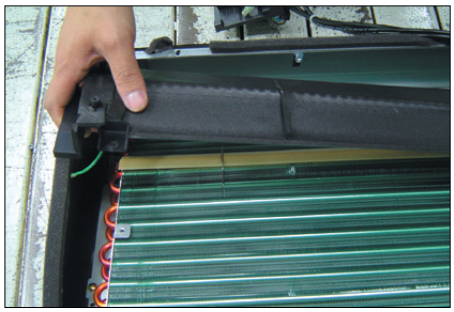
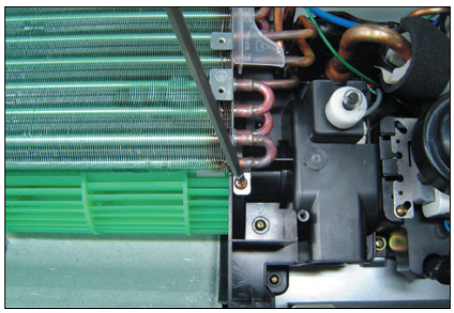
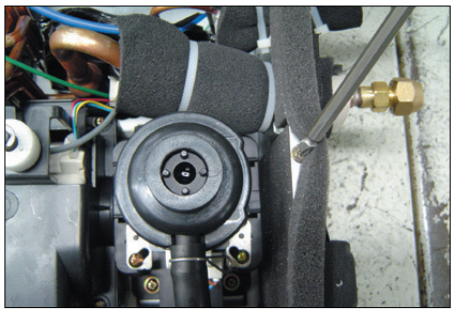
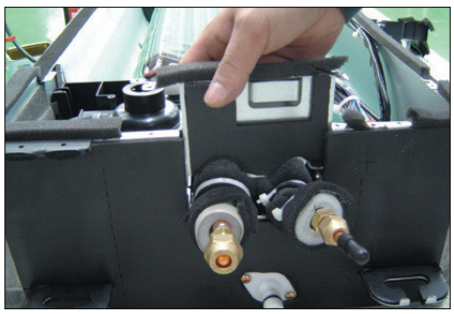
No	Parts	Procedure	Remark
3	Drain Panel	1) Loosen 4 fixing screws for Ass'y Drain Panel around as shown in pictures.	 
		2) Detach Ass'y Drain Panel as shown in Pictures.	

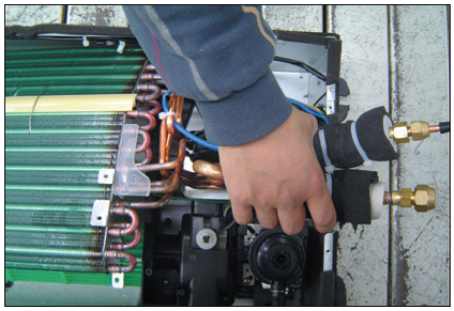
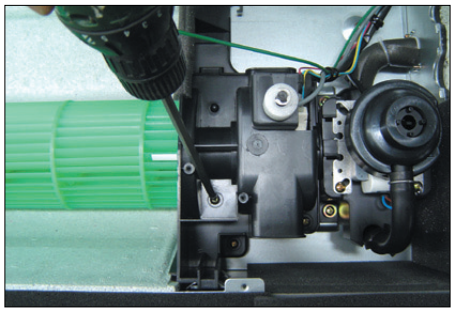
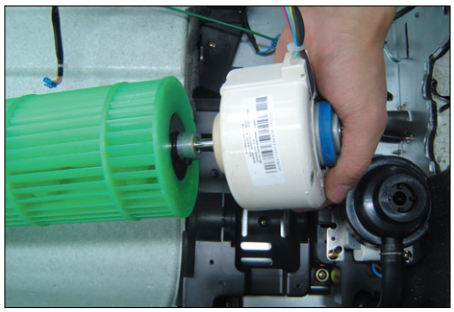
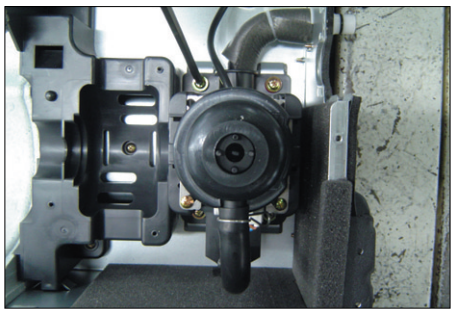
No	Parts	Procedure	Remark
4	Control In	1) Detach the Control Cover after disassembling 2 screws as shown in pictures.	  
		2) Detach the wire connection part of the Ass'y Main PCB as shown in picture.	

No	Parts	Procedure	Remark
		3) Loosen 2 fixing screws of Case Control as shown in pictures.	
			
		4) Loosen the fixing screw.	
		5) Detach the Ass'y Case Control part pulling up.	
			

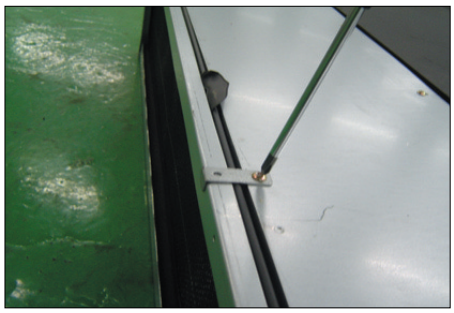
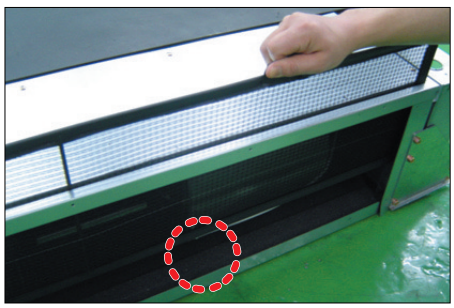
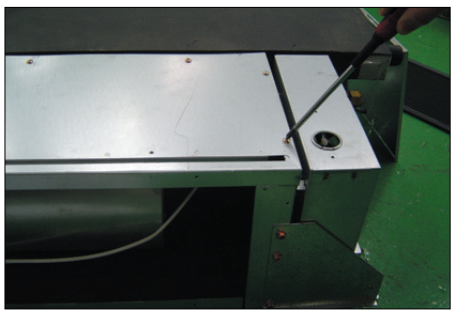
No	Parts	Procedure	Remark
		6) Loosen the fixing screw and detach earth cable.	
		7) Loosen the fixing screw and detach Terminal Cover as shown in pictures.	
			
		8) Loosen 2 fixing screws as shown in pictures.	
			

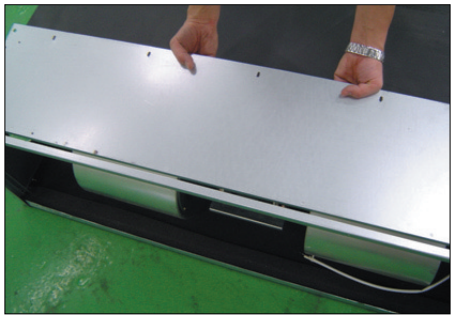
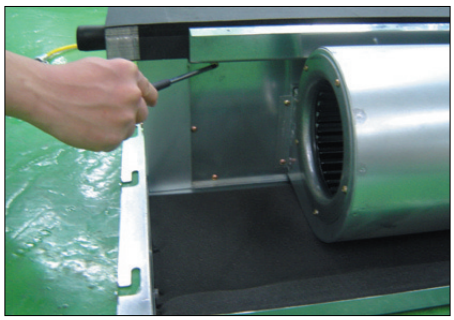
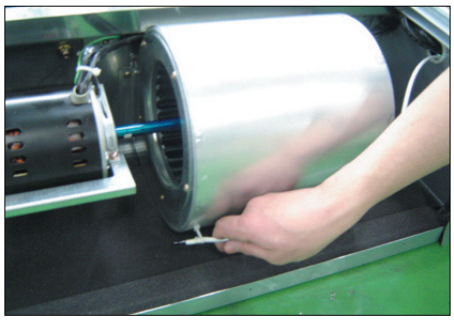
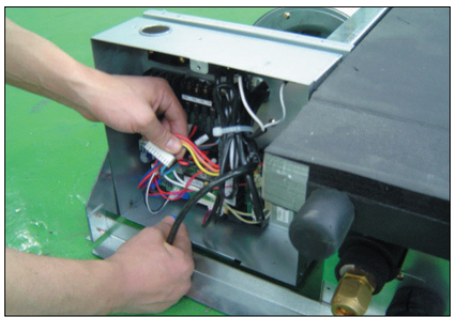
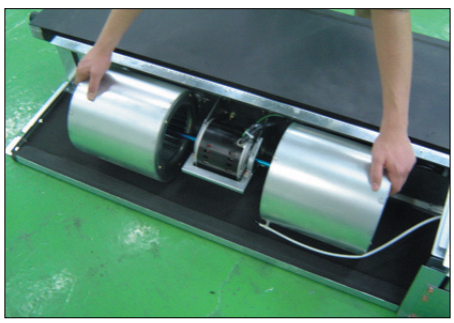
No	Parts	Procedure	Remark
		9) Loosen 2 fixing indicating screws of earth cable and the fixing screw of Base Terminal.	 
		10) Detach Base Terminal as shown in picture.	

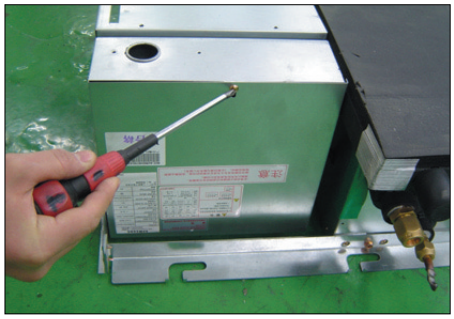
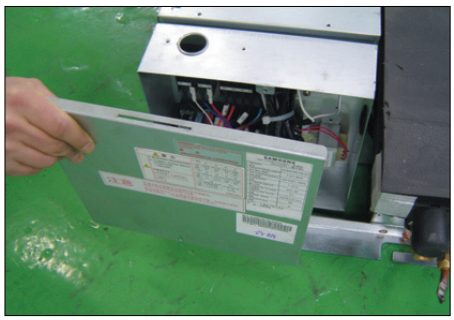
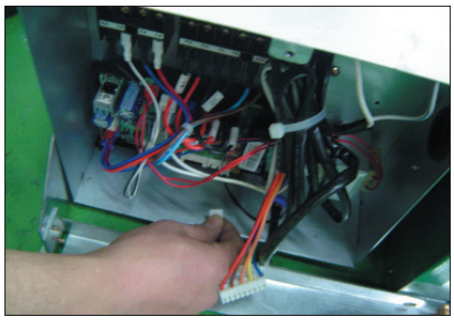
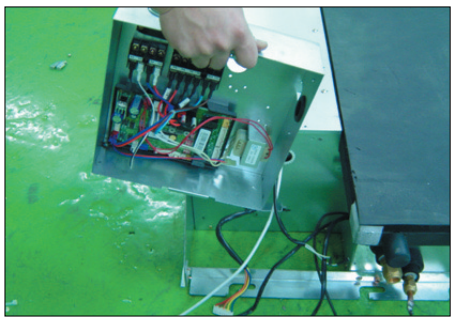
No	Parts	Procedure	Remark
5	Drain Panel Sub	1) Detach Ass'y Drain Panel Sub after loosen 2 fixing screws both side of it.	 
6	Evap	1) Loosen 3 fixing screws of Ass'y Evap around. 2) Loosen 2 fixing screws as shown in picture and detach Ass'y Cabinet-Side LF B.	  

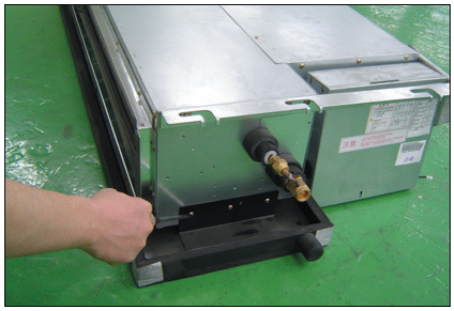
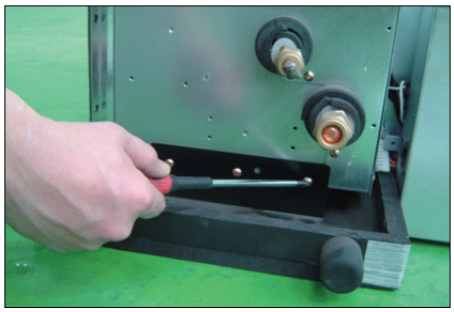
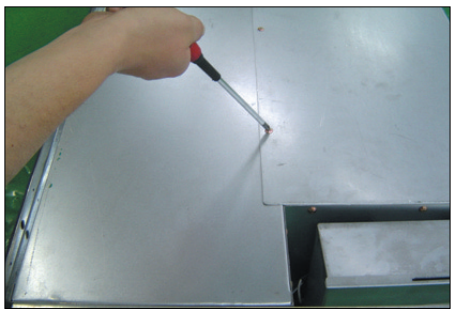
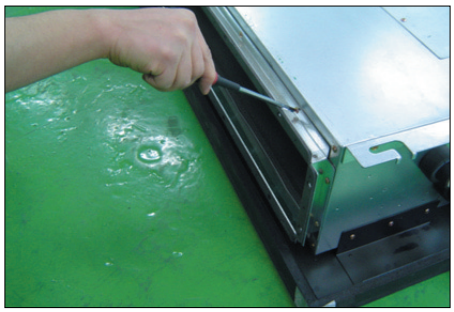
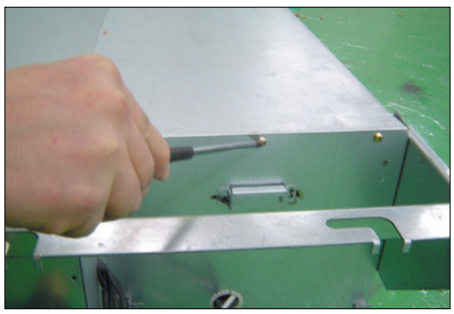
No	Parts	Procedure	Remark
		3) Detach Ass'y Evap pulling up from the indoor unit as shown in picture.	
7	Cross Fan	1) Loosen 3 fixing screws of cover Fan Motor and detach cover Fan Motor.	
		2) Detach Ass'y Cross Fan as shown in picture.	
8	Drain Pump	1) Loosen 4 fixing screws as shown in picture.	
		2) Detach Drain Hose and detach Ass'y Drain Pump as shown in pictures.	

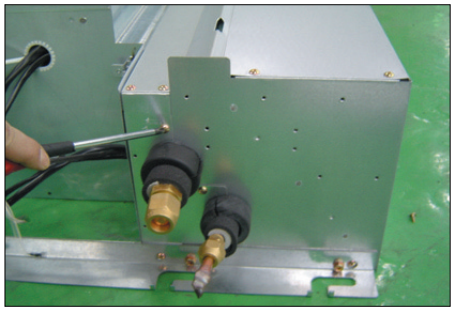
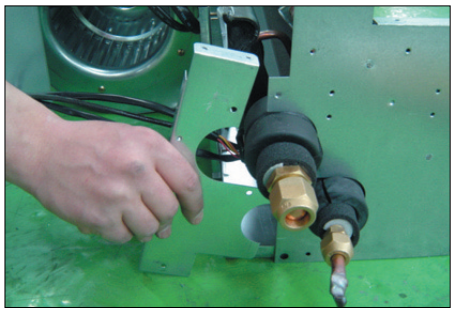
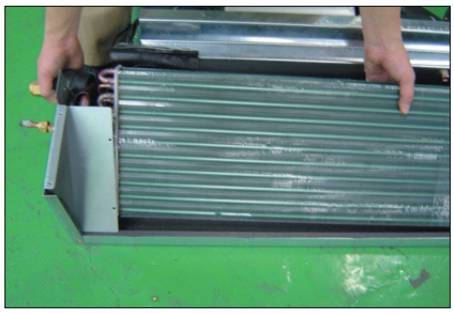
4-1-4 MH✳✳✳FDEA (Silhouette Duct)

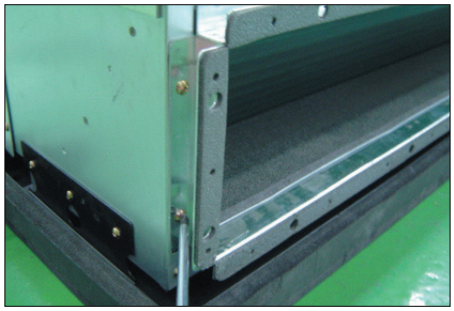
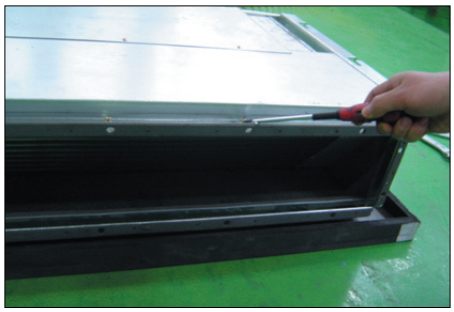
No	Parts	Procedure	Remark
1	Filter-Pre	1) Disassemble screws of indication part and then assemble the direction of 2 Plate-Handle places by use of screw as shown in 2).	
		2) Turn the Plate Handle by hand when removing the Filter-Pre.	
		3) When pulling the Filter-Pre handle, the Filter-Pre can be assembled. ✳ Be sure to remove the cushion on the ◌ marked part after initial installation. (It cause the damage of noise).	
2	Blower & Duct	1) After disassembling places indicating screws, detach Ass'y Cover Bottom.	

No	Parts	Procedure	Remark
		2) Disassemble indicating screws.	
			
		3) Detach the sensor holder from the Ass'y Fan case.	
		4) Detach from Ass'y Control in the capacitor connection wire between the Motor-Fan in and Housing Connector.	
		5) Detach the Ass'y Blower and Duct from the set.	

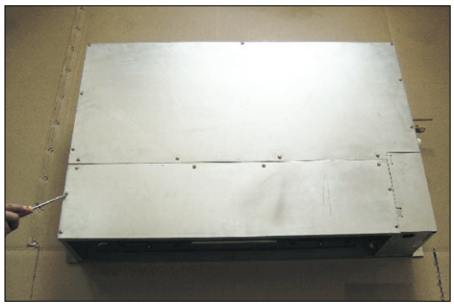
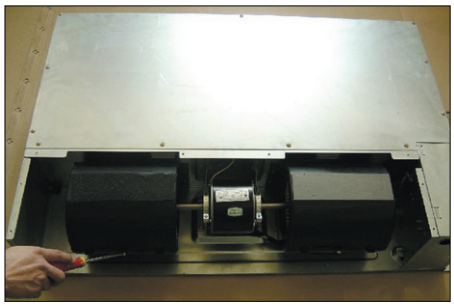
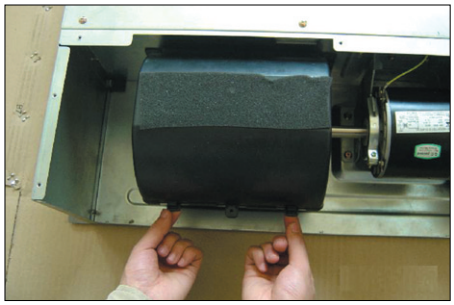
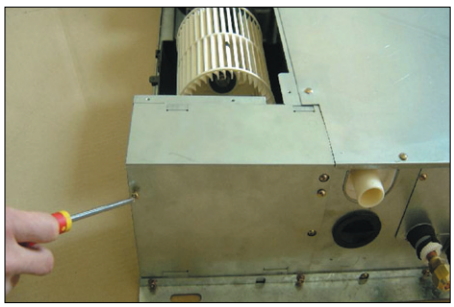
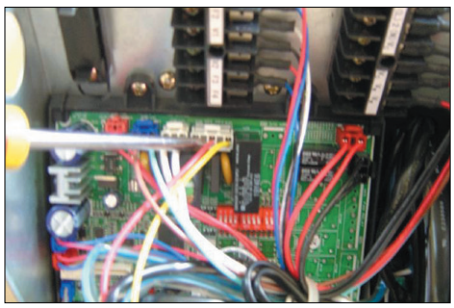
No	Parts	Procedure	Remark
3	Control In	1) After disassembling indicating screw, detach the Cover-Control.	
			
		2) Detach the Motor-Fan in and Sensor Connector connected to PCB.	
		3) Hold the Ass'y Control In by hand to lift up a little and then release the status of hanging on the hanging slot.	

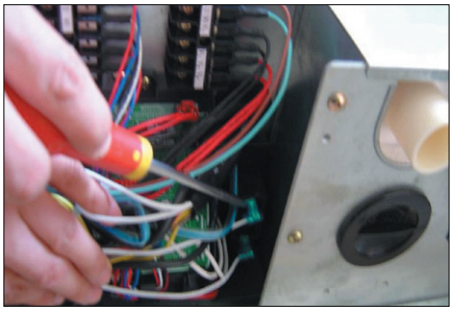
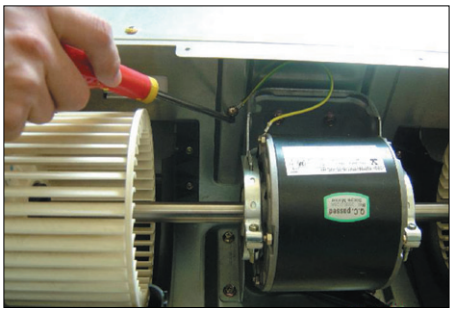
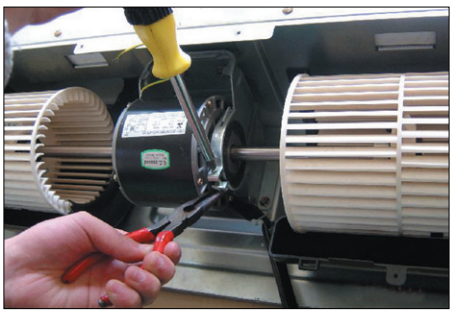
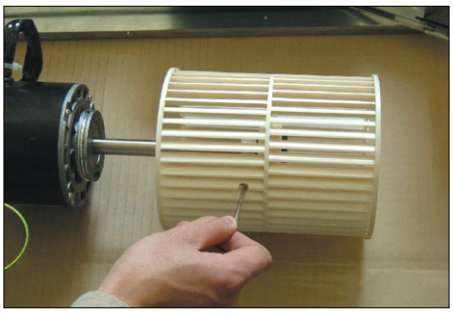
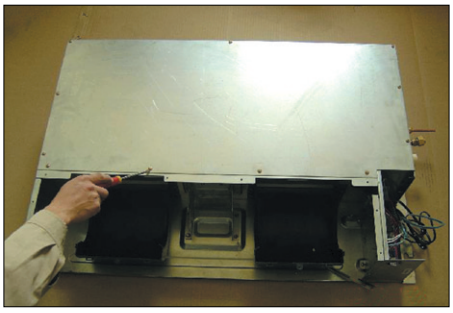
No	Parts	Procedure	Remark
4	Drain Pan	1) Disassemble indicating screws to detach Ass'y Drain Pan. (screws each at left and right side)	 
5	Evap	✳ Work is possible when disassembling the Ass'y Drain Pan. 1) Disassemble indicating screws. (each at left and right side) 2) Disassemble indicating screws. 3) Disassemble indicating screws. ✳ It is possible at the status of No.3 Ass'y Control In disassembly at the time.	  

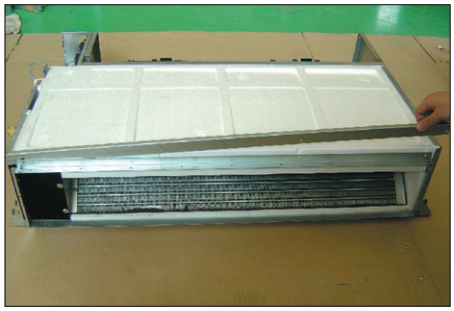
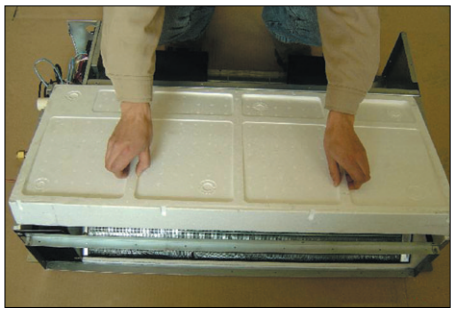
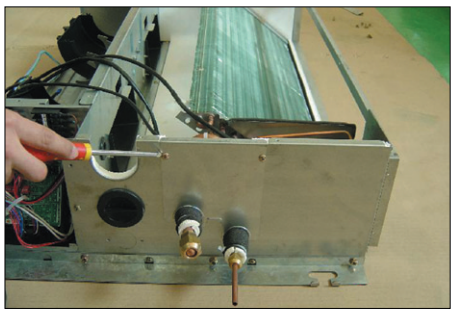
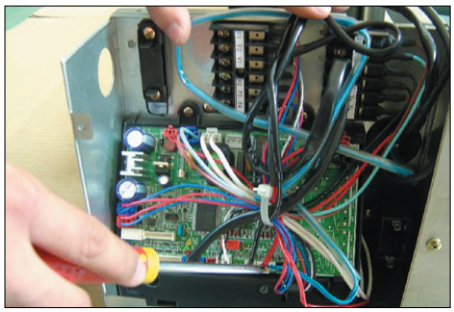
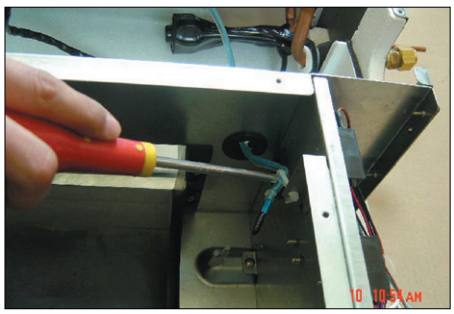
No	Parts	Procedure	Remark
		4) After disassembling indicating screws.	
		5) Pull the Cabinet-Side LF, RH by hand to disassemble.	
		6) Separate indicating screws. (each at left and right side)	
		7) Detach it from the set if the Ass'y-Evap pull up.	

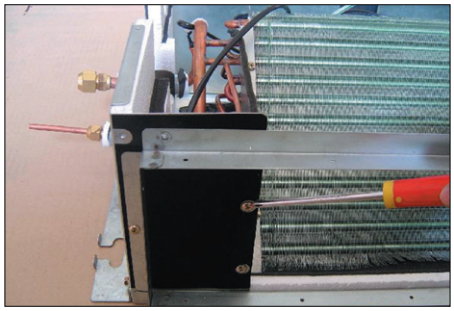
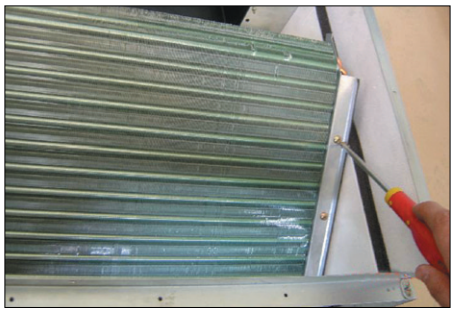
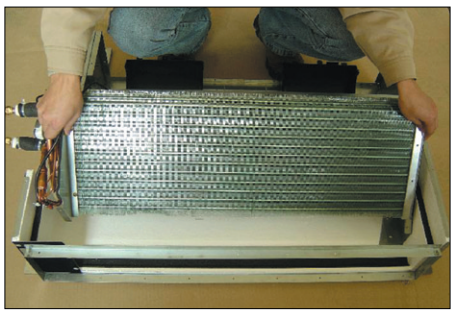
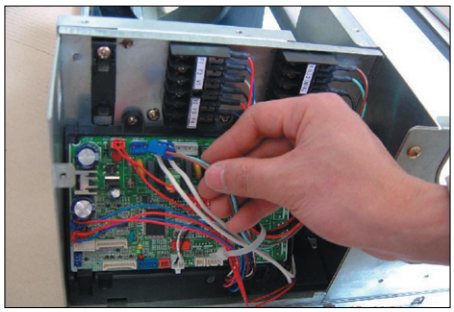
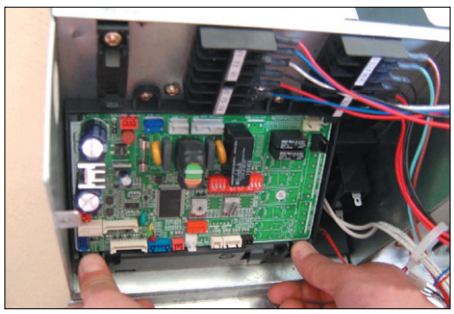
No	Parts	Procedure	Remark
6	Holder Outlet	✳ When connecting canvas to the discharge side. 1) Disassemble indicating screws. (each at left and right side)	
		2) Disassemble indicating screws. (each at upper and lower side) ✳ After connecting canvas to the disassembled Ass'y Holder Outlet 2), attach the Ass'y Holder Outlet to the set in the reverse order.	

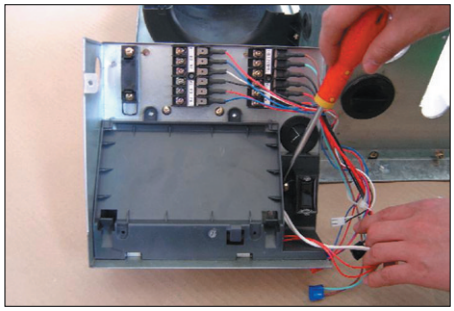
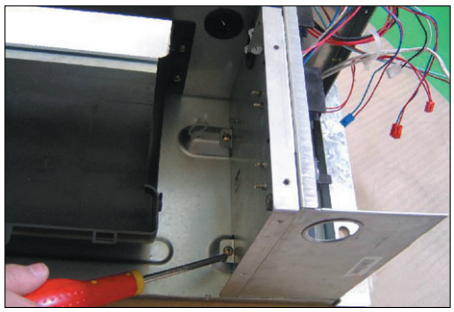
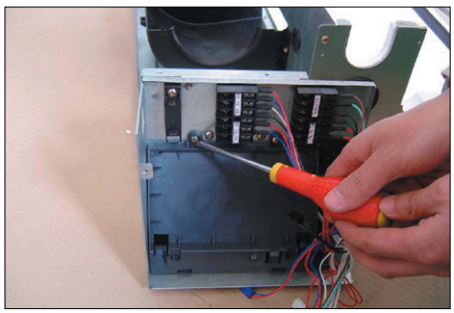
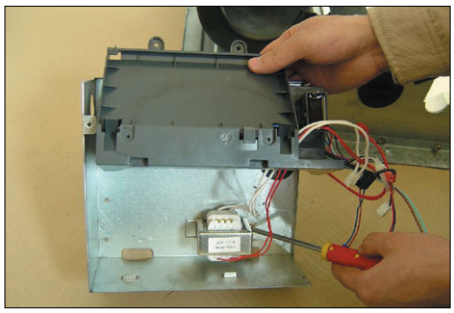
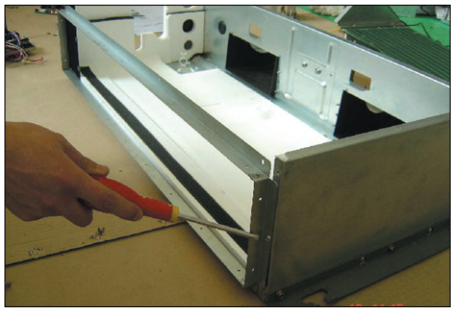
4-1-5 MH✳✳✳FEEA (Slim Duct)

No	Parts	Procedure	Remark
1	Motor & Blower	1) Disassemble the Cabinet Top Motor. – Unscrew 8 screws	
		2) Disassemble 2 Cover Blower Uppers. – After unscrewing 2 screws	
		– Disassemble the Cover Blower Upper with pushing its hook.	
		3) Disassemble the Cover Control. – Unscrew 2 screws	
		4) Disassemble Motor Wires connected to the inside of PCB and connected to the Capacitor.	

No	Parts	Procedure	Remark
			
		5) Disassemble the Motor earth wire connected to the Partition. – Unscrew a screw	
		6) Disassemble the band Motor for fixing the Motor. – Unscrew 2 screws	
		7) After disassembling the Motor and Blower for the set, disassemble the Blower by use of 3mm wrench.	
2	Drain Pan	1) Disassemble the Cabinet Top Evap. – Unscrew 11 screws	

No	Parts	Procedure	Remark
		2) Disassemble the Bracket Outlet Sub that fixes the Drain Pan equipped on the front of the set. – Unscrew 6 screws	
		3) Disassemble the Drain Cushion from the set.	
3	Evaporator	✳ The Evaporator should be disassembled after disassembling the Cover Control 1-3) and the Drain Pan 2-1), 2-2), 2-3). 1) Disassemble the Cover Pipe that fixes the high/low pressure Pipe. – Unscrew 2 screws	
		2) Disassemble the refrigerant temperature sensor, Inlet air temperature sensor, and EEV wire that connected to the inside of PCB.	 

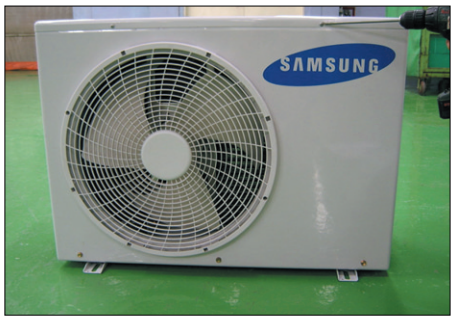
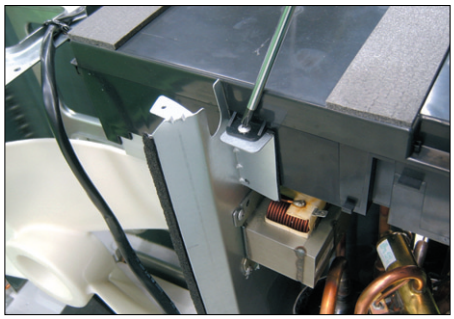
No	Parts	Procedure	Remark
		3) Disassemble the Support Evap. LF that fixes the Evaporator. – Unscrew 2 screws	
		4) Disassemble the Support Evap RH. – Unscrew 2 screws	
		5) Disassemble the Evaporator form the set.	
4	Control In	✳ The Control In should be disassembled after disassembling the Cover Control 1-3). 1) Disassemble all Control Wires connected to the inside of PCB.	
		2) In case of disassembling the PCB separately, disassemble the PCB from the case with pushing the hook after unscrewing the screw. – Unscrew 1 screw	

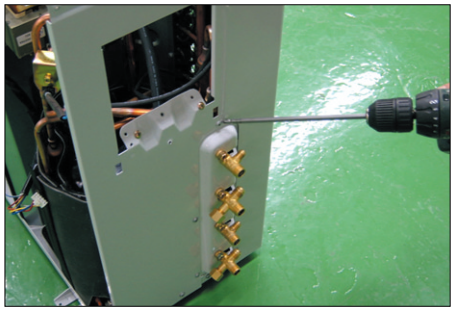
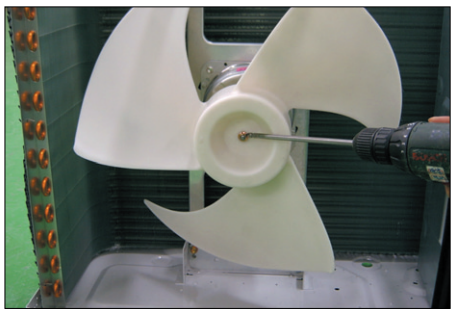
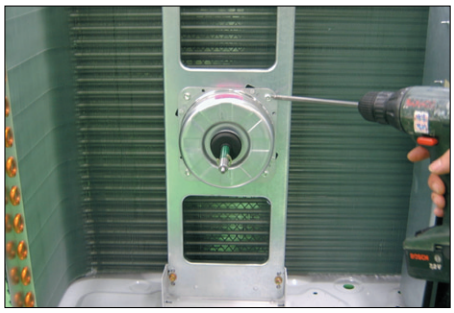
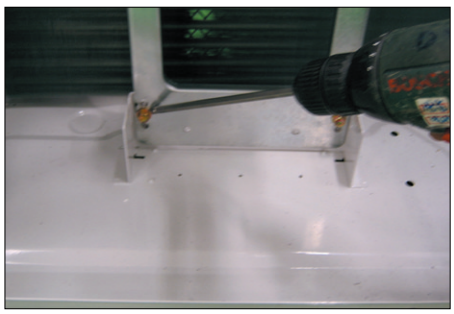
No	Parts	Procedure	Remark
		3) In case of disassembling the Capacitor separately, disassemble the Capacitor from the Case.	
		4) In case of disassembling the Case Control, disassemble the Case Control from the set after unscrewing the screw connected to the direction of Blower. ✳ Disassemble if after disassembling the Cabinet Top Motor 1-1).	
		5) In case of disassembling the Trans Power, unscrew the screw fixing on the Case. ✳ Disassemble if after disassembling the case PCB 4-4).	 
5	Bracket Outlet	1) Disassemble the Bracket Outlet assembled on the Cabinet. – Unscrew 10 screws	

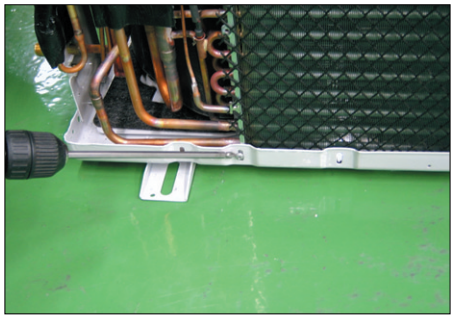
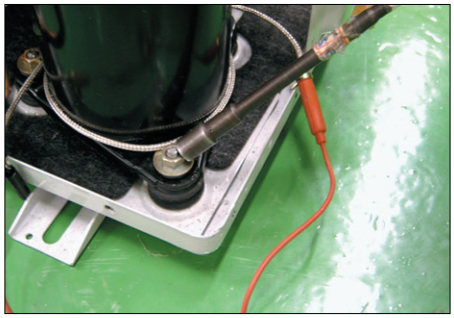
4-2 Outdoor Unit

Take care of the electrical shock by contact on the charging parts before the discharge after power off. (If takes approximately 2 minutes to discharge.)

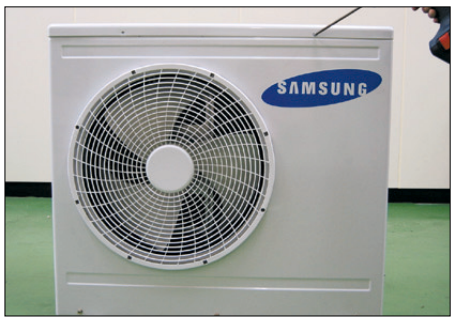
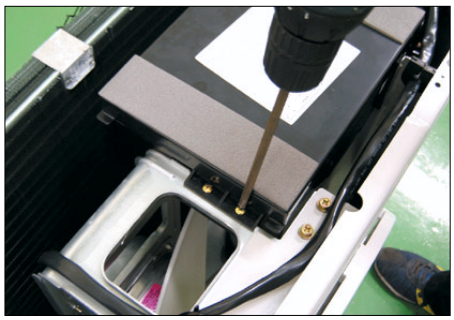
4-2-1 MH040FXEA2/MH052FXEA2/MH14VP2X/MH16VP2X/MH18VP2X/MH19VP2X/MH14VW2X/MH16VW2X/MH18VW2X/MH19VW2X

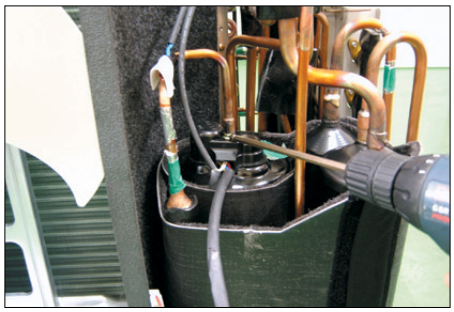
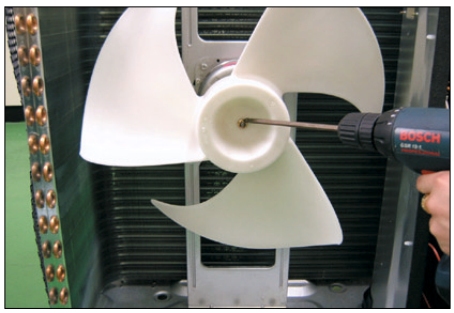
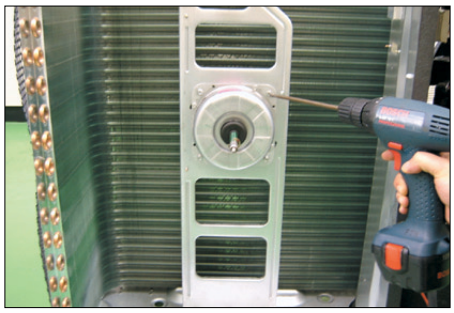
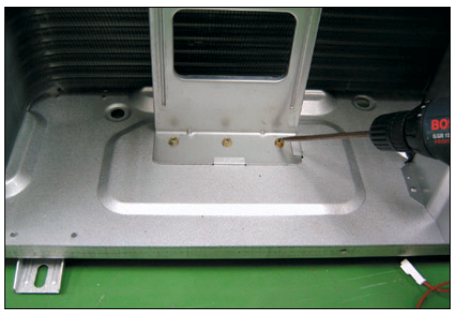
No	Parts	Procedure	Remark
1	Common Work & Control Out	1) Loosen the fixing screw and detach the Cover-Control. 2) Detach the Cable-Connector Wire from the Terminal-Block. 3) Loosen the fixing screw of the Ass'y Control Out.	
		4) Loosen 8 fixing screws and detach the Cabinet Upper.	
		5) Loosen 2 fixing screws, 5 bolts and detach the Front Cabinet.	
		6) Loosen 2 fixing screws and pull up the Control Box.	

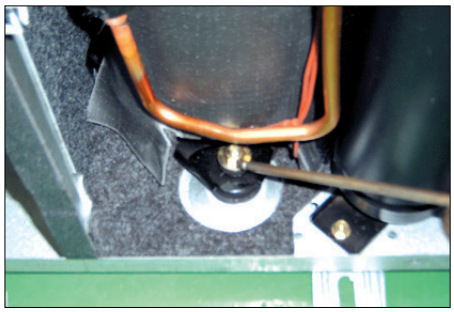
No	Parts	Procedure	Remark
		7) Loosen 9 fixing screws and detach the Cabinet Side.	
		8) Detach the Terminal and detach the Compressor Lead Wire.	
2	Fan & Motor	1) Loosen the fixing nut and detach the Fan.	
		2) Loosen 4 fixing bolts and detach the Motor.	
		3) Loosen 2 fixing bolts and detach the Bracket Motor.	

No	Parts	Procedure	Remark
3	Heat Exchanger & Compressor	1) Release the refrigerant at first. 2) Disassemble the Inlet and Outlet Pipe by welding. 3) Loosen the fixing screws of the Heat Exchanger. 4) Detach the Heat Exchanger.	
		5) Loosen 3 nuts of the Compressor. 6) Detach the Compressor.	

4-2-2 MH068FXEA4/MH080FXEA4/MH30VP2X/MH30VW2X

No	Parts	Procedure	Remark
1	Common Work & Control Out	1) Loosen the fixing screw and detach the Cover-Control. 2) Detach the Cable-Connector Wire from the Terminal-Block. 3) Loosen 2 fixing screws of the Ass'y Control Out.	
		4) Loosen 8 fixing screws and detach the Cabinet Upper.	
		5) Loosen 6 fixing screws, 7 bolts and detach the Cabinet Front.	
		6) Loosen 4 fixing screw and pull up the Control Box.	

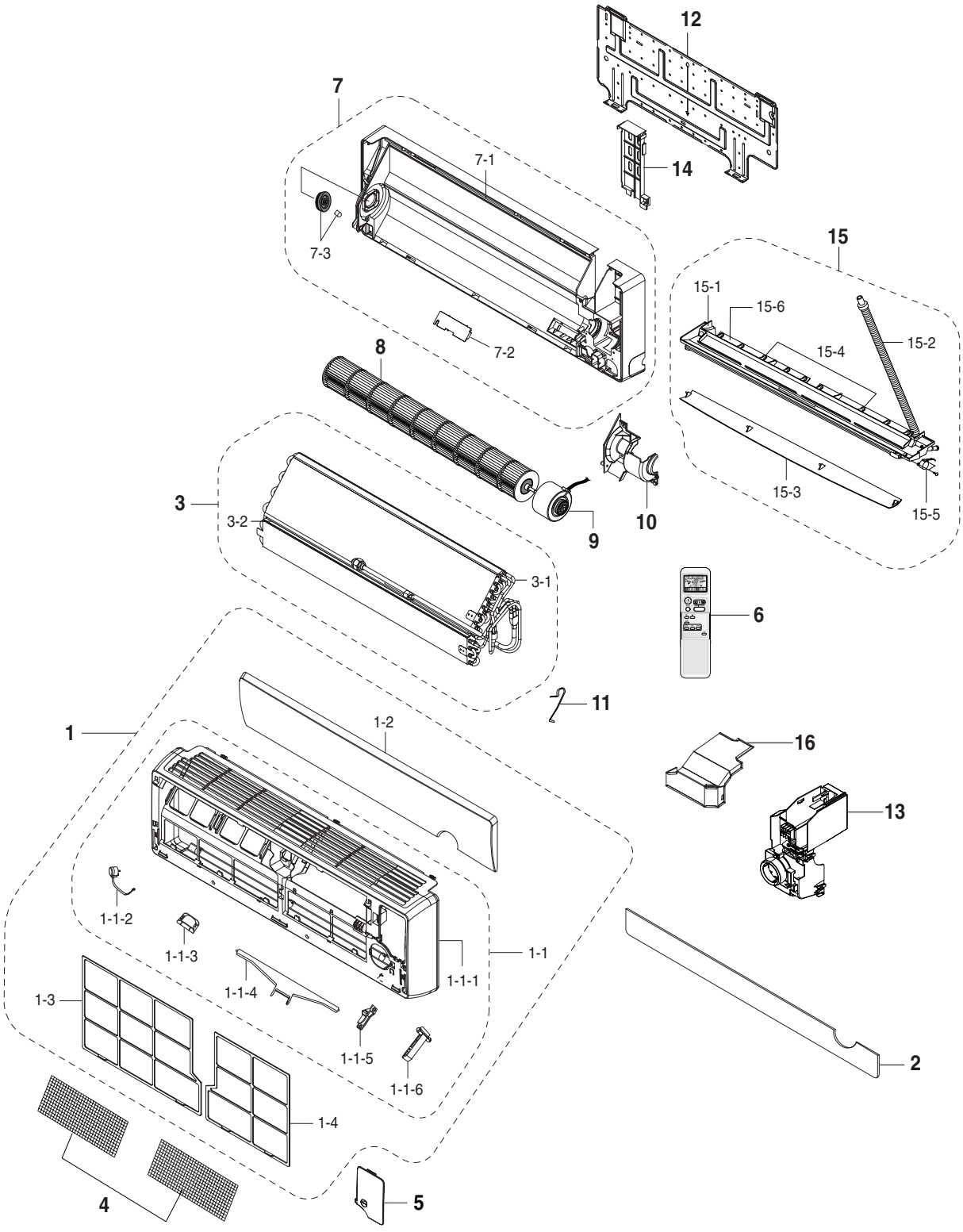
No	Parts	Procedure	Remark
		7) Loosen 12 fixing screws and detach the Cabinet Side.	
		8) Detach the Terminal Cover and detach the comp lead wire.	
2	Fan & Motor	1) Loosen the fixing nut and detach the Fan.	
		2) Loosen 4 fixing bolts and detach the Motor.	
		3) Loosen 3 fixing bolts and detach the Bracket Motor.	

No	Parts	Procedure	Remark
3	Heat Exchanger & Compressor	1) Release the refrigerant at first. 2) Disassemble the Inlet and Outlet Pipe by welding. 3) Loosen the fixing screw of the Heat Exchanger. 4) Detach the Heat Exchanger.	
		5) Loosen 3 nuts of the Compressor. 6) Detach the Compressor.	

5. Exploded Views and Parts List

5-1 Indoor Unit

5-1-1 MH020FPEA/MH023FPEA/MH026FPEA/MH035FPEA/MH14VP2-07/MH16VP2-07/ MH16VP2-09/MH18VP2-09/MH19VP2-07/MH19VP2-12/MH30VP2-09/MH30VP2-12



■ **Parts List**

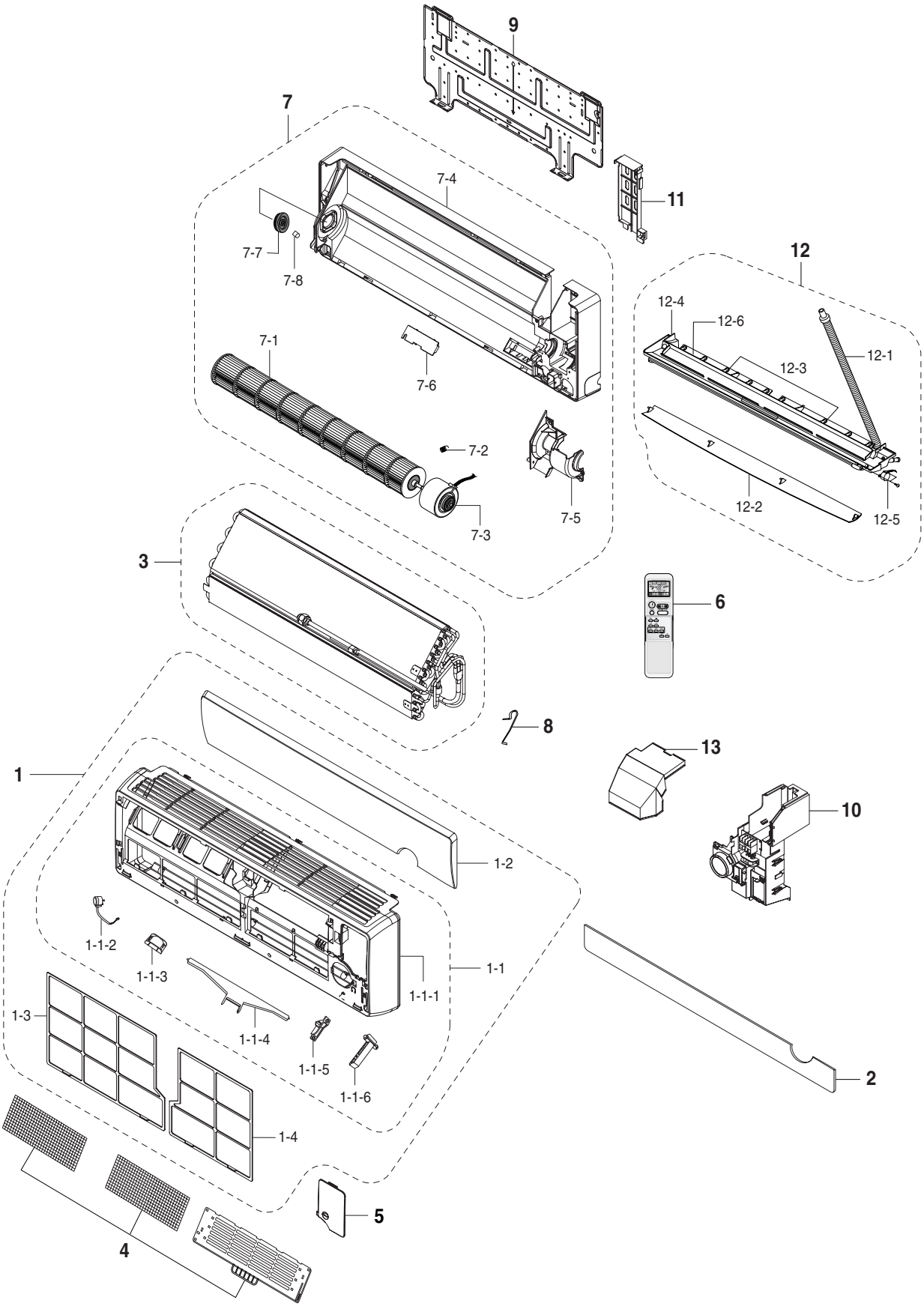
No.	Code No.	Description	Specification	Q'TY		SA/SNA	Remark
				MH020FPEA MH023FPEA MH026FPEA MH✳✳VP2-07 MH✳✳VP2-09	MH035FPEA MH✳✳VP2-12		
1	DB92-00561F	ASS'Y PANEL FRONT TOTAL	ASS'Y	-	1	SA	
	DB92-00558F	ASS'Y PANEL FRONT TOTAL	ASS'Y	1	-	SA	
1-1	DB92-00560A	ASS'Y PANEL FRONT SUB-P	ASS'Y	-	1	SC	
	DB92-00557A	ASS'Y PANEL FRONT SUB-P	ASS'Y	1	-	SA	
1-1-1	DB92-00559A	ASS'Y PANEL FRONT SUB	ASS'Y	-	1	SA	
	DB92-00556A	ASS'Y PANEL FRONT SUB	ASS'Y	1	-	SC	
1-1-2	DB31-00166B	MOTOR STEP	-	1	1	SA	
1-1-3	DB61-01114A	HOLDER MOTOR DC	HIPS	-	1	SA	
	DB61-01123A	HOLDER MOTOR DC	HIPS	1	-	SC	
1-1-4	DB61-01115A	HINGE GRILLE	HIPS	-	1	SC	
	DB61-01132A	HINGE GRILLE	HIPS	1	-	SC	
1-1-5	DB61-01116A	GUIDE LINK	HIPS	-	1	SC	
	DB61-01133A	GUIDE LINK	HIPS	1	-	SC	
1-1-6	DB66-00364A	LINK MOTOR	ABS	-	1	SA	
	DB66-00365A	LINK MOTOR	ABS	1	-	SA	
1-2	DB64-00640A	GRILLE UP	ABS	-	1	SA	
	DB64-00655A	GRILLE UP	ABS	1	-	SA	
1-3	DB63-00585E	FILTER-PRE LF	PP	-	1	SA	
	DB63-00590F	FILTER-PRE LF	PP	1	-	SA	
1-4	DB63-00586E	FILTER-PRE RH	PP	-	1	SA	
	DB63-00591F	FILTER-PRE RH	PP	1	-	SA	
2	DB92-00540A	ASS'Y GRILLE LOW	ASS'Y	-	1	SA	
	DB92-00538A	ASS'Y GRILLE LOW	ASS'Y	1	-	SA	
3	DB96-03801A	ASS'Y EVAPORATOR TOTAL	ASS'Y	-	1	SA	
	DB96-03796A	ASS'Y EVAPORATOR TOTAL	ASS'Y	1	-	SA	
3-1	DB96-03800B	ASS'Y EVAPORATOR	ASS'Y	-	1	SNA	
	DB96-03797B	ASS'Y EVAPORATOR	ASS'Y	1	-	SNA	
3-2	DB67-00051A	SPACER-EVAP LOW	PVC	1	-	SNA	
4	DB95-00367E	ASS'Y FILTER BIO	ASS'Y	1	1	SC	
5	DB63-00581A	COVER TERMINAL	HIPS	-	1	SA	
	DB63-00588A	COVER TERMINAL	HIPS	1	-	SNA	
6	DB93-03016N	ASS'Y REMOCON	ASS'Y	1	1	SA	
7	DB94-00488A	ASS'Y BACK BODY-SUB	ASS'Y	-	1	SA	
	DB94-00486A	ASS'Y BACK BODY-SUB	ASS'Y	1	-	SA	
7-1	DB61-01098A	BACK BODY	HIPS	-	1	SNA	
	DB61-01119A	BACK BODY	HIPS	1	-	SNA	
7-2	DB63-00580A	COVER-IONIZER	HIPS	1	1	SA	
7-3	DB94-00258A	ASS'Y BEARING	ASS'Y	1	1	SA	
8	DB94-00040R	ASS'Y CROSS FAN	ASS'Y	-	1	SC	
	DB94-00040F	ASS'Y CROSS FAN	ASS'Y	1	-	SA	

■ **Parts List(cont.)**

No.	Code No.	Description	Specification	Q'TY		SA/SNA	Remark
				MH020FPEA MH023FPEA MH026FPEA MH**VP2-07 MH**VP2-09	MH035FPEA MH**VP2-12		
9	DB31-00152B	MOTOR-FAN IN	-	-	1	SA	
	DB31-00152A	MOTOR-FAN IN	-	1	-	SA	
10	DB61-01099A	HOLDER-MOTOR	PP	-	1	SA	
	DB61-01120A	HOLDER-MOTOR	PP	1	-	SC	
11	DB67-60030A	SPRING-SENSOR	STS301	1	1	SNA	
12	DB70-00276A	PLATE-HANGER	SGCC-M	-	1	SA	
	DB70-00288A	PLATE-HANGER	SGCC-M	1	-	SA	
13	DB93-02885A	ASS'Y CONTROL IN	ASS'Y	-	1	SA	
	DB93-02884A	ASS'Y CONTROL IN	ASS'Y	1	-	SA	
14	DB90-00992A	ASS'Y HOLDER-PIPE	HIPS	-	1	SA	
	DB61-01121A	HOLDER-PIPE	HIPS	1	-	SNA	
15	DB94-00468B	ASS'Y TRAY DRAIN	ASS'Y	-	1	SA	
	DB94-00465A	ASS'Y TRAY DRAIN	ASS'Y	1	-	SA	
15-1	DB63-00587A	TRAY DRAIN	HIPS	-	1	SNA	
	DB63-00592A	TRAY DRAIN	HIPS	1	-	SNA	
15-2	DB94-00062E	ASS'Y DRAIN HOSE	ASS'Y	1	1	SA	
15-3	DB61-01103A	BLADE-H	HIPS	-	1	SC	
	DB61-01125A	BLADE-H	HIPS	1	-	SA	
15-4	DB61-01104A	BLADE-V	PP	-	3	SA	
	DB61-01126A	BLADE-V	PP	3	-	SC	
15-5	DB95-20138A	ASS'Y MOTOR STEPPING	ASS'Y	1	1	SA	
15-6	DB63-00634A	GUARD-SAFETY WIRE	STS27	-	1	SNA	OPTION
	DB63-00635A	GUARD-SAFETY WIRE	STS27	1	-	SNA	OPTION
16	DB90-02062A	ASS'Y COVER CONTROL IN	ASS'Y	1	-	SNA	
	DB63-01283A	COVER CONTROL IN	SGCC-M	-	1	SNA	

MEMO

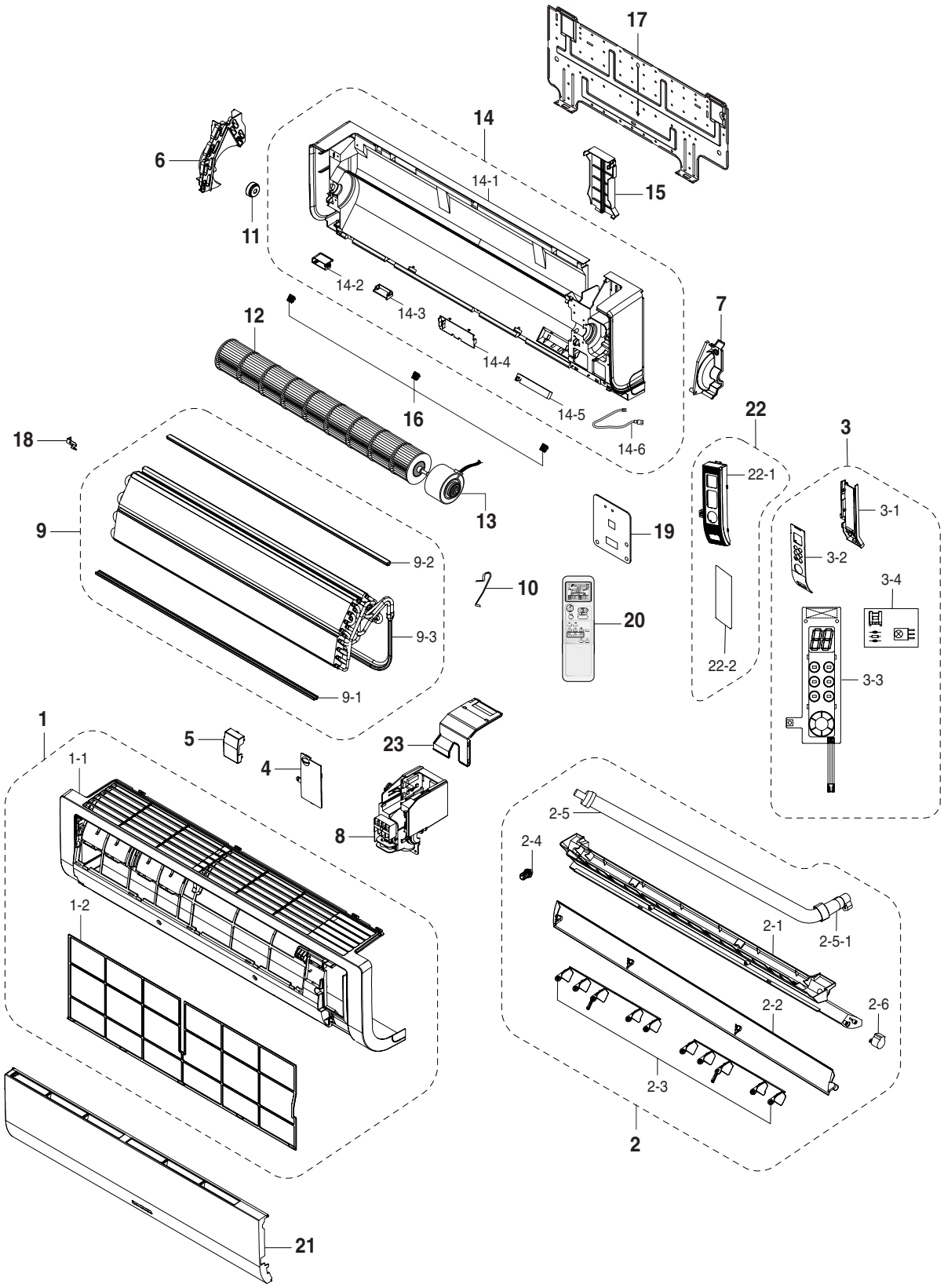
5-1-2 MH052FPEA/MH052FPEA1



■ **Parts List**

No.	Code No.	Description	Specification	Q'TY		SA/SNA
				MH052FPEA	MH052FPEA1	
1	DB92-00447H	ASS'Y PANEL FRONT-TOTAL	ASS'Y	1	1	SA
1-1	DB92-00471A	ASS'Y PANEL SUB	ASS'Y	1	1	SA
1-1-1	DB92-00386A	ASS'Y PANEL FRONT-SUB	ASS'Y	1	1	SA
1-1-2	DB31-00195B	MOTOR STEP	-	1	1	SC
1-1-3	DB61-01114A	HOLDER MOTOR DC	HIPS	1	1	SA
1-1-4	DB61-01144A	HINGE GRILLE	HIPS	1	1	SA
1-1-5	DB61-01116A	GUIDE LINK	HIPS	1	1	SC
1-1-6	DB66-00366A	LINK MOTOR	ABS	1	1	SC
1-2	DB64-00670A	GRILLE UP	HIPS	1	1	SA
1-3	DB63-00596D	FILTER-LF	PP	1	1	SA
1-4	DB63-00597D	FILTER-RH	PP	1	1	SA
2	DB92-00449D	ASS'Y GRILLE LOW SUB	ASS'Y	1	1	SA
3	DB96-03798A	ASS'Y EVAP-TOTAL	ASS'Y	1	1	SA
4	DB95-00367F	ASS'Y FILTER BIO	ASS'Y	1	1	SA
5	DB63-00594A	COVER TERMINAL	HIPS	1	1	SA
6	DB93-03016N	ASS'Y REMOCON	ASS'Y	1	1	SA
7	DB94-00531A	ASS'Y BACK BODY	ASS'Y	1	1	SA
7-1	DB94-00040J	ASS'Y CROSS FAN	ASS'Y	1	1	SA
7-2	DB60-20011A	BOLT SPECIAL	M6	1	1	SA
7-3	DB31-10151C	MOTOR-FAN IN	-	1	1	SA
7-4	DB61-01135A	BACK BODY	HIPS	1	1	SNA
7-5	DB61-01136A	HOLDER-MOTOR	PP	1	1	SNA
7-6	DB63-00580A	COVER-IONIZER	HIPS	1	1	SA
7-7	DB73-00128A	RUBBER BEARING	-	1	1	SA
7-8	DB94-40007A	ASS'Y BEARING-MOTOR	-	1	1	SNA
8	DB67-60030A	SPRING SENSOR	-	1	1	SNA
9	DB70-00295A	PLATE-HANGER	SGCC-M	1	1	SA
10	DB93-03489A	ASS'Y CONTROL IN	ASS'Y	-	1	SA
	DB93-02744A	ASS'Y CONTROL IN	ASS'Y	1	-	SA
11	DB61-01137A	HOLDER-PIPE	HIPS	1	1	SA
12	DB94-00300E	ASS'Y TRAY DRAIN	ASS'Y	-	1	SA
	DB94-00300C	ASS'Y TRAY DRAIN	ASS'Y	1	-	SA
12-1	DB94-00062B	ASS'Y DRAIN HOSE	ASS'Y	1	1	SA
12-2	DB61-01141A	BLADE-H	ABS	1	1	SA
12-3	DB61-01142A	BLADE-V	PP	3	3	SA
12-4	DB63-00598A	TRAY DRAIN	ABS	1	1	SNA
12-5	DB31-00285A	MOTOR-STEPPING BLADE	-	-	1	SA
	DB31-10154A	MOTOR-STEPPING BLADE	-	1	-	SA
12-6	DB63-00699A	GUARD-SAFETY WIRE	-	1	1	SA
13	DB63-01284A	COVER CONTROL IN	SGCC-M	-	1	SNA

5-1-3 MH023FWEA/MH026FWEA/MH035FWEA/MH14VW2-07/MH16VW2-07/MH16VW2-09/ MH18VW2-09/MH19VW2-07/MH19VW2-12/MH30VW2-09/MH30VW2-12



■ **Parts List**

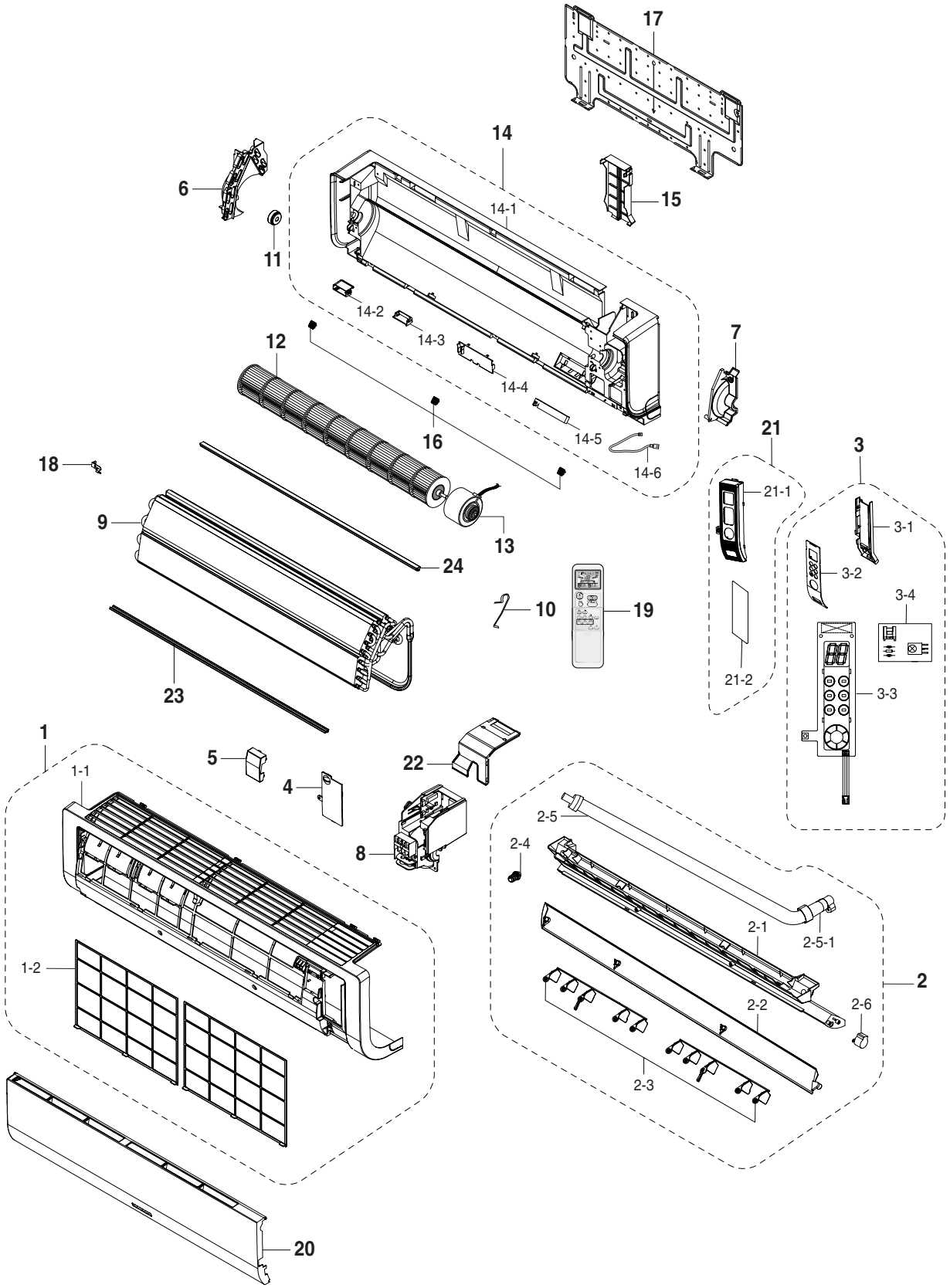
No.	Code No.	Description	Specification	Q'TY		SA/SNA
				MH023FWEA MH026FWEA MH✳✳VW2-07 MH✳✳VW2-09	MH035FWEA MH✳✳VW2-12	
1	DB92-00633B	ASS'Y PANEL FRONT	ASS'Y	1	1	SA
1-1	DB64-01210B	PANEL FRONT	HIPS	1	1	SNA
1-2	DB63-01103A	FILTER-PRE	PP	1	1	SA
2	DB94-00629A	ASS'Y TRAY DRAIN	ASS'Y	1	1	SA
2-1	DB63-01104A	TRAY DRAIN	ABS	1	1	SNA
2-2	DB61-02049A	BLADE-H	ABS	1	1	SA
2-3	DB61-02053A	BLADE-V	PP	2	2	SA
2-4	DB73-00234A	RUBBER-CAP DRAIN	CR	1	1	SA
2-5	DB94-00062L	ASS'Y DRAIN-HOSE	ASS'Y	1	1	SA
2-5-1	DB67-00510A	DRAIN-CUFF	ABS	1	1	SNA
2-6	DB95-20138A	ASS'Y MOTOR-STEPPING	24BYJ48	1	1	SA
3	DB93-02960A	ASS'Y DISPLAY	ASS'Y	1	1	SA
3-1	DB61-02056A	HOLDER DISPLAY	HIPS	1	1	SNA
3-2	DB64-01211A	WINDOW DISPLAY	HIPS	1	1	SNA
3-3	DB93-02806A	ASS'Y PCB DISPLAY	ASS'Y	1	1	SNA
3-4	DB93-01369A	ASS'Y MODULE PCB	ASS'Y	1	1	SA
4	DB63-01448A	COVER TERMINAL	HIPS V0	1	1	SNA
5	DB63-01107B	COVER PCB-DVM	HIPS	1	1	SNA
6	DB61-02050A	HOLDER EVAP	ABS	1	1	SNA
7	DB61-02052A	HOLDER MOTOR	PP	1	1	SNA
8	DB93-03659A	ASS'Y CONTROL IN	ASS'Y	1	1	SNA
9	DB96-05269B	ASS'Y EVAP TOTAL	ASS'Y	-	1	SA
	DB96-05269A	ASS'Y EVAP TOTAL	ASS'Y	1	-	SA
9-1	DB60-00198A	SPACER-EVAP MID	PVC	1	1	SNA
9-2	DB60-00203B	SPACER-EVAP UP	PVC	1	1	SNA
9-3	DB96-05313B	ASS'Y EVAP	FP1.3, H-FIN, 2x12	-	1	SNA
	DB96-05313A	ASS'Y EVAP	FP1.5, H-FIN, 2x12	1	-	SNA
10	DB67-60030A	SPRING-SENSOR	STS 301	1	1	SNA
11	DB94-00674A	ASS'Y BEARING-RUBBER	ASS'Y, CR 45	1	1	SA
12	DB94-00627A	ASS'Y-CROSS FAN	ø83 x 719	1	1	SA
13	DB31-00270A	MOTOR FAN-IN	YDK-20S4D8C-1	1	1	SA
14	DB94-00626D	ASS'Y BACK BODY	ASS'Y	1	1	SA
14-1	DB61-02057A	BODY BACK	HIPS	1	1	SNA
14-2	DB61-02047A	BUSH BODY LF	HIPS	1	1	SNA
14-3	DB61-02048A	BUSH BODY RH	HIPS	1	1	SNA
14-4	DB63-01105A	COVER-IONIZER	HIPS	1	1	SNA
14-5	DB91-00287A	ASS'Y ELECTRIC-IONIZER	ASS'Y	1	1	SA
14-6	DB93-01383G	ASS'Y C/W ION	ASS'Y	1	1	SNA
15	DB61-02051A	HOLDER-PIPE	HIPS	1	1	SNA
16	DB67-00508A	CAP SCREW	HIPS	3	3	SNA

■ **Parts List(cont.)**

No.	Code No.	Description	Specification	Q'TY		SA/SNA
				MH023FWEA MH026FWEA MH**VW2-07 MH**VW2-09	MH035FWEA MH**VW2-12	
17	DB70-00514A	PLATE-HANGER	SGCC-M, T0.8	1	1	SA
18	DB70-00515A	PLATE CONTACT	SUS 304	1	1	SNA
19	DB70-00516A	PLATE-CONTROL IN	SGCC-M	1	1	SNA
20	DB93-03016R	ASS'Y REMOCON	ARH-1315	1	1	SA
21	DB92-00643C	ASS'Y GRILLE	ASS'Y	1	1	SA
22	DB90-01829J	ASS'Y COVER DISPLAY	ASS'Y	1	1	SNA
22-1	DB63-01108A	COVER DISPLAY	PC	1	1	SNA
22-2	DB64-01276A	INLAY DISPLAY	ACRYL	1	1	SNA
23	DB90-01920A	ASS'Y COVER CONTROL	ASS'Y	1	1	SNA

MEMO

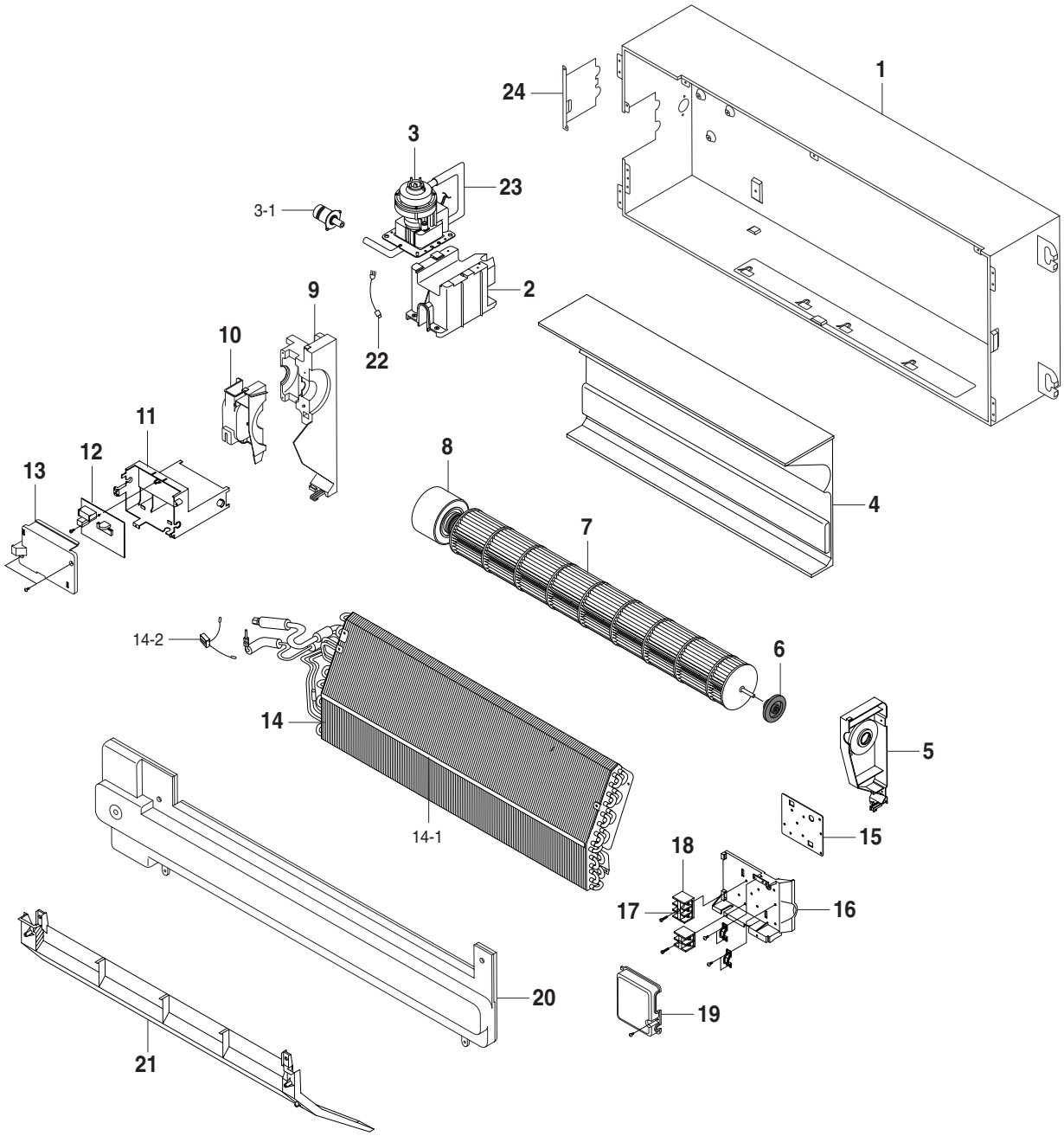
5-1-4 MH052FWEA



■ **Parts List**

No.	Code No.	Description	Specification	Q'TY	SA/SNA
1	DB92-00658A	ASS'Y PANEL FRONT	ASS'Y	1	SA
1-1	DB64-01263B	PANEL FRONT	HIPS	1	SNA
1-2	DB63-01192A	FILTER-PRE	PP	2	SNA
2	DB94-00653A	ASS'Y TRAY DRAIN	ASS'Y	1	SA
2-1	DB63-01193A	TRAY DRAIN	ABS	1	SNA
2-2	DB61-02198A	BLADE-H	ABS	1	SA
2-3	DB61-02197A	BLADE-V	PP	2	SA
2-4	DB73-00234A	RUBBER-CAP DRAIN	CR	1	SA
2-5	DB94-00062L	ASS'Y DRAIN-HOSE	ASS'Y	1	SA
2-5-1	DB67-00510A	DRAIN-CUFF	ABS	1	SNA
2-6	DB31-00285A	MOTOR STEPPING	35BYJ46-276	1	SA
3	DB93-02960B	ASS'Y DISPLAY	ASS'Y	1	SA
3-1	DB61-02196A	HOLDER-DISPLAY	HIPS	1	SNA
3-2	DB64-01302A	WINDOW-DISPLAY	HIPS	1	SNA
3-3	DB93-02806A	ASS'Y PCB DISPLAY	ASS'Y	1	SNA
3-4	DB93-01369A	ASS'Y PCB-MODULE	ASS'Y	1	SA
4	DB63-01195A	COVER TERMINAL	HIPS V0	1	SNA
5	DB63-01194B	COVER PCB	HIPS	1	SNA
6	DB61-02194A	HOLDER-EVAP	ABS	1	SNA
7	DB94-00727A	ASS'Y HOLDER-MOTOR	ASS'Y	1	SA
8	DB93-03660A	ASS'Y CONTROL IN	ASS'Y	1	SNA
9	DB96-05264A	ASS'Y EVAP-TOTAL	ASS'Y	1	SA
10	DB67-60030A	SPRING-SENSOR	STS 301	1	SNA
11	DB94-00674A	ASS'Y RUBBER BEARING	ASS'Y	1	SA
12	DB94-00040X	ASS'Y-CROSS FAN	ASS'Y	1	SA
13	DB31-10151E	MOTOR-FAN IN	220/240V, 60/50Hz	1	SA
14	DB94-00652A	ASS'Y BACK BODY	ASS'Y	1	SA
14-1	DB61-02190A	BODY BACK	HIPS	1	SNA
14-2	DB61-02191A	BUSH-BODY LF	HIPS	1	SNA
14-3	DB61-02199A	BUSH-BODY RH	HIPS	1	SNA
14-4	DB63-01105A	COVER-IONIZER	HIPS	1	SNA
14-5	DB91-00287A	ASS'Y ELECTRIC-IONIZER	ASS'Y	1	SA
14-6	DB93-01383E	ASS'Y CONNECTOR WIRE	ASS'Y	1	SNA
15	DB61-02195A	HOLDER-PIPE	HIPS	1	SNA
16	DB67-00540A	CAP-SCREW	HIPS	3	SNA
17	DB70-00536A	PLATE-HANGER	SGCC-M, T0.8	1	SA
18	DB70-00515A	PLATE-CONTACT	SUS 304	2	SNA
19	DB93-03016R	ASS'Y REMOCON	ARH-1315	1	SA
20	DB92-00657A	ASS'Y GRILLE	ASS'Y	1	SA
21	DB90-01869E	ASS'Y COVER-DISPLAY	ASS'Y	1	SA
21-1	DB63-01196A	COVER DISPLAY	PC	1	SNA
21-2	DB64-01276A	INLAY-DISPLAY	ACRYL	1	SNA
22	DB90-01932A	ASS'Y COVER CONTROL	ASS'Y	1	SA
23	DB60-00204A	SPACER-EVAP MID	PVC	1	SNA
24	DB94-00724A	ASS'Y SPACER-EVAP UP	ASS'Y, PVC	1	SNA

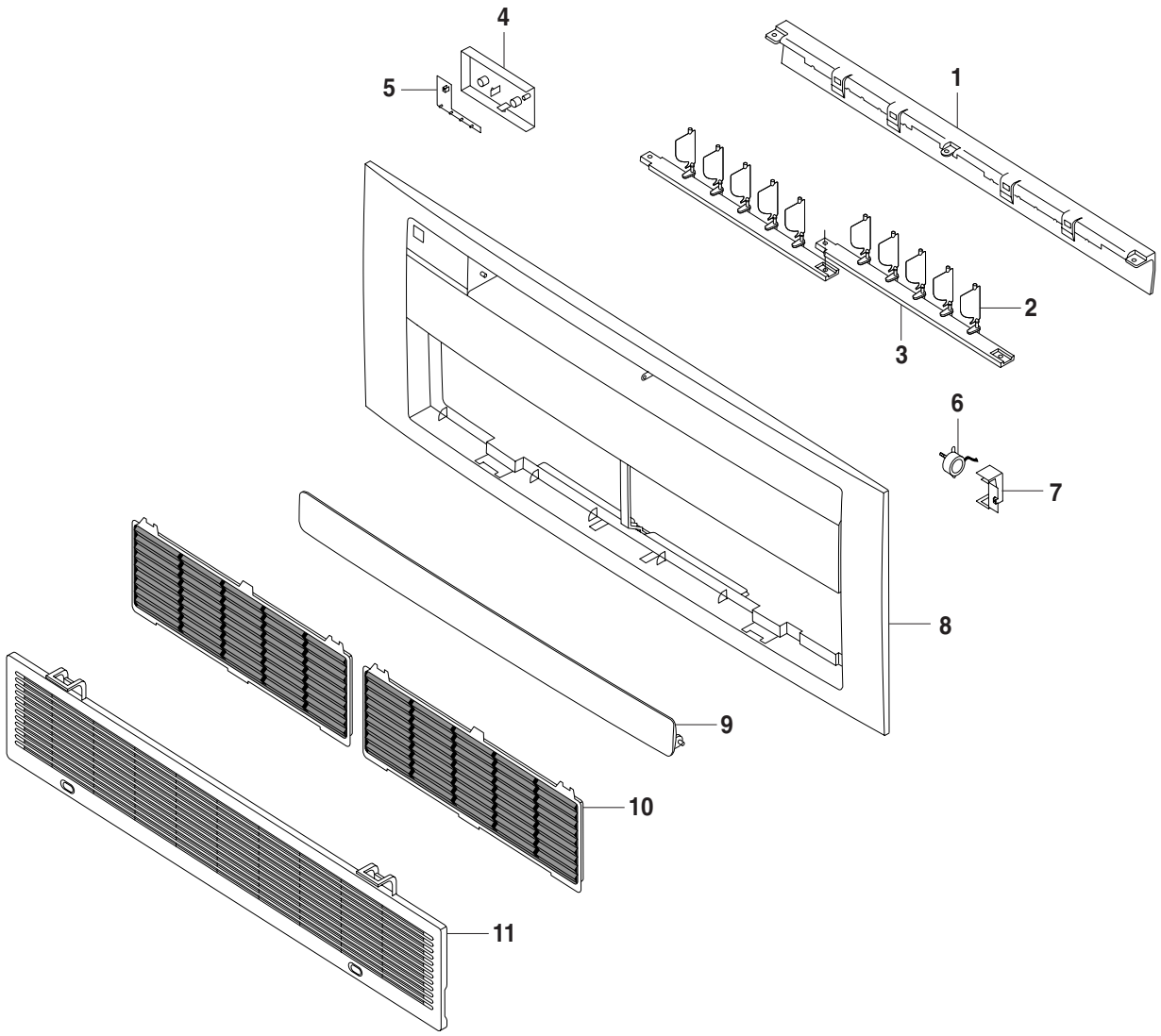
5-1-5 MH026FKEA / MH035FKEA



■ **Parts List**

No.	Code No.	Description	Specification	Q'TY	SA/SNA
1	DB90-00588E	ASS'Y CABINET IN	ASS'Y	1	SA
2	DB61-00364A	HOLDER DRAIN PUMP	Fire-Resistant P.S(V0)	1	SNA
3	DB31-00303A	DRAIN PUMP	FUJIKOKI	1	SA
3-1	DB31-00303A	DRAIN HOSE-SOCKET	POM	1	SNA
4	DB69-00298A	CUSHION BODY	EPS	1	SNA
5	DB61-00363A	CASE-FAN SIDE	Fire-Resistant P.S(V0)	1	SNA
6	DB94-00066A	ASS'Y BEARING	ASS'Y	1	SNA
7	DB94-00040K	ASS'Y CROSS FAN	ASS'Y	1	SA
8	DB31-10078M	MOTOR FAN	PFS040WTVE	1	SA
9	DB61-00354A	HOUSING MOTOR	Fire-Resistant P.S(V0)	1	SNA
10	DB63-00165A	COVER FAN MOTOR	Fire-Resistant P.S(V0)	1	SA
11	DB61-00362A	CASE CONTROL	Fire-Resistant P.S(V0)	1	SNA
12	DB93-02335D	ASS'Y PCB	ASS'Y	1	SA
13	DB63-00167A	COVER CONTROL	ASS'Y	1	SA
14	DB96-01190H	ASS'Y EVAP-IN	ASS'Y	1	SA
14-1	DB60-00057A	SPACER EVAP	ABS	1	SA
14-2	DB32-00035B	THERMISTOR-ASS'Y	103AT	1	SA
15	DB61-00365A	BRACKET TERMINAL	SGCC-M	1	SNA
16	DB61-00394A	BASE TERMINAL	ABS	1	SNA
17	DB65-00004B	TERMINAL BLOCK	DAF 2P	1	SA
18	DB65-00004C	TERMINAL BLOCK	DAF 4P	1	SA
19	DB63-00168A	COVER TERMINAL	Fire-Resistant P.S(V0)	1	SA
20	DB94-00084A	ASS'Y DRAIN	ASS'Y	1	SA
21	DB94-00290A	ASS'Y DRAIN PAN SUB	ASS'Y	1	SA
22	DB95-00131A	ASS'Y SENSOR FLOAT	ASS'Y	1	SA
23	DB62-02199A	VALVE CHECK	ASS'Y	1	SA
	DB67-00382A	HOSE DRAIN	DURITE-01	1	SA
24	DB90-00589A	ASS'Y CABINET-SIDE LF	ASS'Y	1	SA

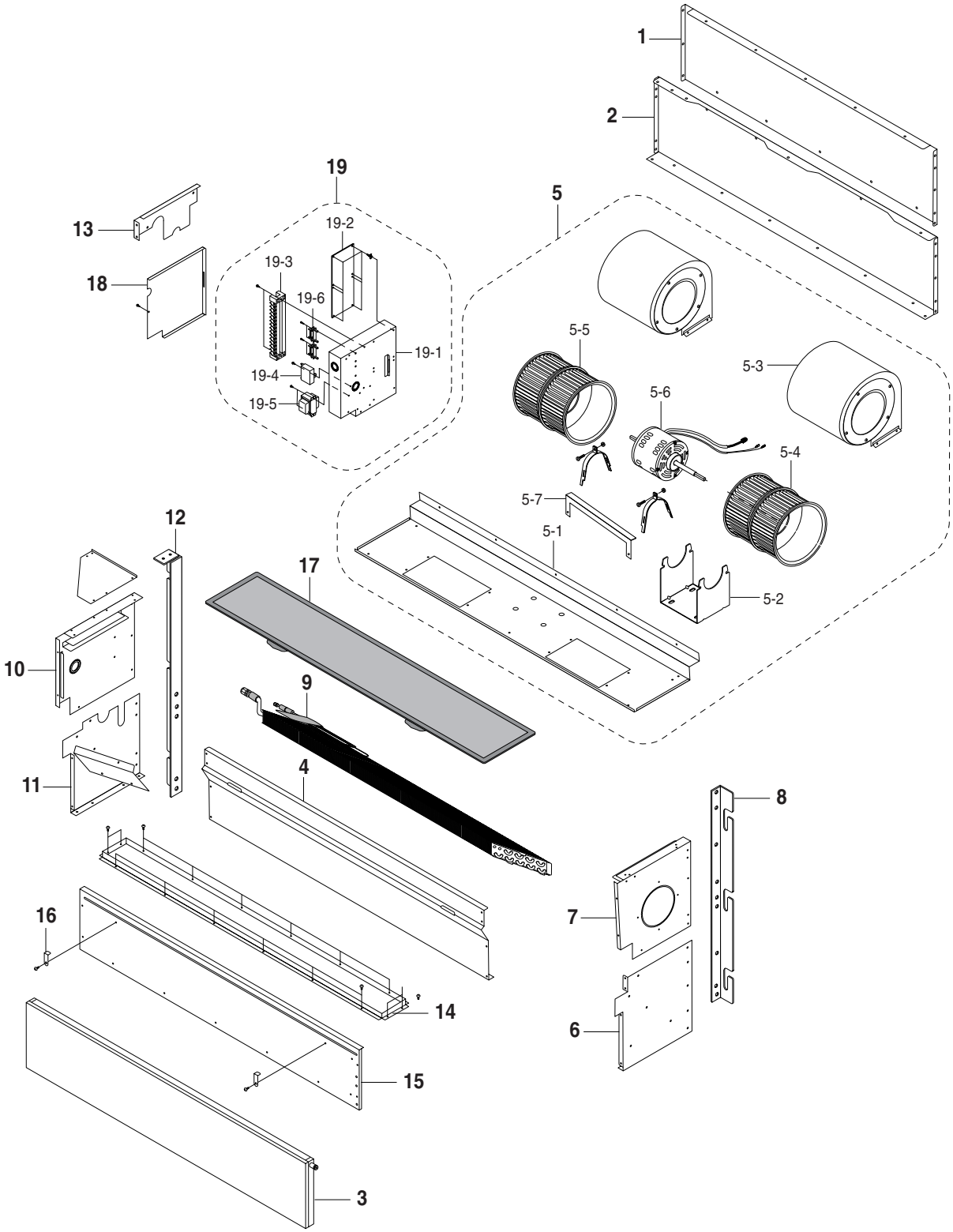
■ PK118MG



■ **Parts List**

No.	Code No.	Description	Specification	Q'TY	SA/SNA
1	DB63-00164A	COVER BLADE	HIPS (UL94-V0)	1	SA
2	DB66-00160A	BLADE-V	HIPS (UL94-V0)	10	SA
3	DB66-00157A	LINK BLADE-LF	POM	2	SA
4	DB63-00163A	COVER PCB CASE	HIPS (UL94-V0)	1	SA
5	DB93-01021A	ASS'Y PCB DISPLAY	-	1	SA
6	DB31-10153D	MOTOR STEP	MSFCC20A05	1	SA
7	DB61-00535A	HOLDER MOTOR	HIPS (UL94-V0)	1	SNA
8	DB64-00234B	PANEL FRONT	HIPS (UL94-V0)	1	SA
9	DB66-00159A	BLADE-H	HIPS (UL94-V0)	1	SA
10	DB64-00243B	GRILLE FRONT	HIPS (UL94-V0)	1	SA
11	DB64-00244A	GRILLE INLET AIR	PP	1	SA

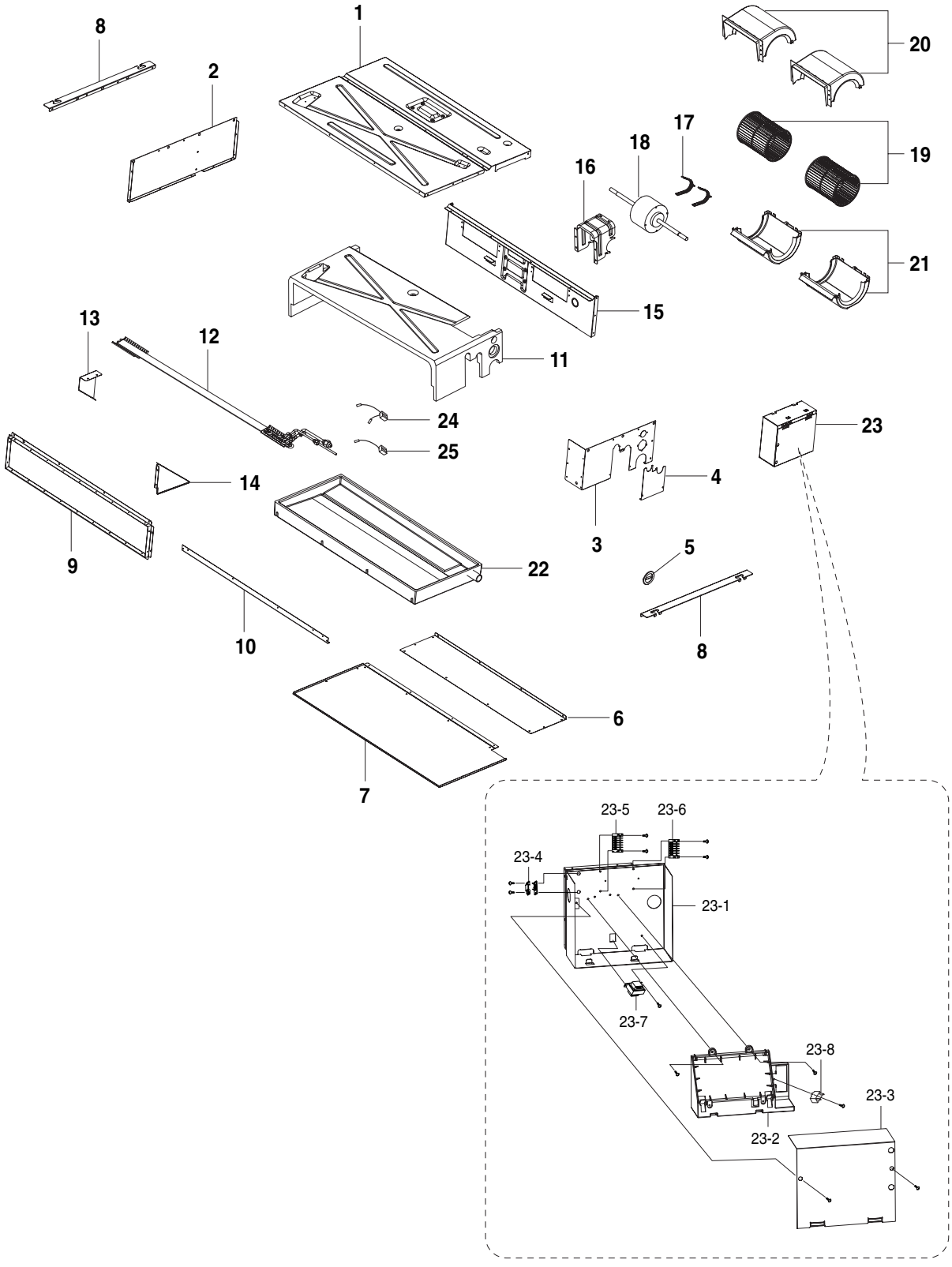
5-1-6 MH052FDEA



■ **Parts List**

No.	Code No.	Description	Specification	Q'TY	SA/SNA
1	DB63-00076A	COVER-TOP	SGCC-M T0.8	1	SNA
2	DB63-00074A	COVER-CASE DUCT	SGCC-M T0.8	1	SNA
3	DB94-00022A	ASS'Y-DRAIN PAN	ASS'Y, BLK	1	SA
4	DB61-00099A	CASE-BOTTOM	SGCC-M, T0.8	1	SNA
5	DB94-00023C	ASS'Y-BLOWER DUCT	ASS'Y	1	SA
5-1	DB64-00071A	PANEL-DUCT HOLDER	SGCC-M, T1.2	1	SNA
5-2	DB61-00155A	BRACKET-MOUNT MOTOR	SGCC-M, T2.0	1	SNA
5-3	DB90-00121A	ASS'Y-CASE FAN	ASS'Y	2	SNA
5-4	DB67-00046A	BLOWER-LF	SGCC-M, ø175	1	SA
5-5	DB67-00046B	BLOWER-RH	SGCC-M, ø175	1	SA
5-6	DB31-00025A	MOTOR-FAN IN	OSME-1004 SAC	1	SA
5-7	DB61-00499A	BRACKET-MOTOR GUIDE	SGCC-M, T1.6	1	SNA
6	DB90-00117A	ASS'Y-CABINET LF	ASS'Y	1	SA
7	DB90-00119C	ASS'Y-CABINET INLET LF	ASS'Y	1	SNA
8	DB70-00026B	PLATE-HANGER LF	SGCC-M, T2.0	1	SA
9	DB96-03225F	ASS'Y-EVAP UNIT	ASS'Y	1	SA
10	DB90-00120C	ASS'Y-CABINET INLET RH	ASS'Y	1	SNA
11	DB90-00118A	ASS'Y-CABINET SIDE RH	ASS'Y	1	SA
12	DB70-00027B	PLATE-HANGER RH	SGCC-M, T2.0	1	SA
13	DB64-00121A	CABINET-SIDE RH B	SGCC-M, T0.8	1	SNA
14	DB90-00113A	ASS'Y-HOLDER OUTLET	ASS'Y	1	SA
15	DB90-00114A	ASS'Y-COVER BOTTOM	ASS'Y	1	SA
16	DB71-00019A	PLATE-HANDLE	SGCC-M, T1.2	2	SA
17	DB74-00006A	FILTER-PRE	PE, 36x40	1	SA
18	DB63-00186A	COVER-CONTROL	SGCC-M, T0.8	1	SNA
19	DB93-01037Y	ASS'Y-CONTROL IN	ASS'Y	1	SA
19-1	DB90-00282A	ASS'Y-CASE CONTROL	ASS'Y	1	SNA
19-2	DB93-01764D	ASS'Y-PCB MAIN	DPM24K DUCT IN	1	SA
19-3	DB65-00004H	TERMINAL-BLOCK 6P	DAF-6P	1	SA
	DB65-00004C	TERMINAL-BLOCK 6P	DAF-6P	1	SA
19-4	2301-001369	C-FILM	2.5µF/450VAC	1	SA
19-5	DB26-10065B	TRANS-POWER	DC17 AC230V 50Hz	1	SA
19-6	DB61-40291B	HOLDER-WIRE	PP, T2.0, BLK	2	SNA

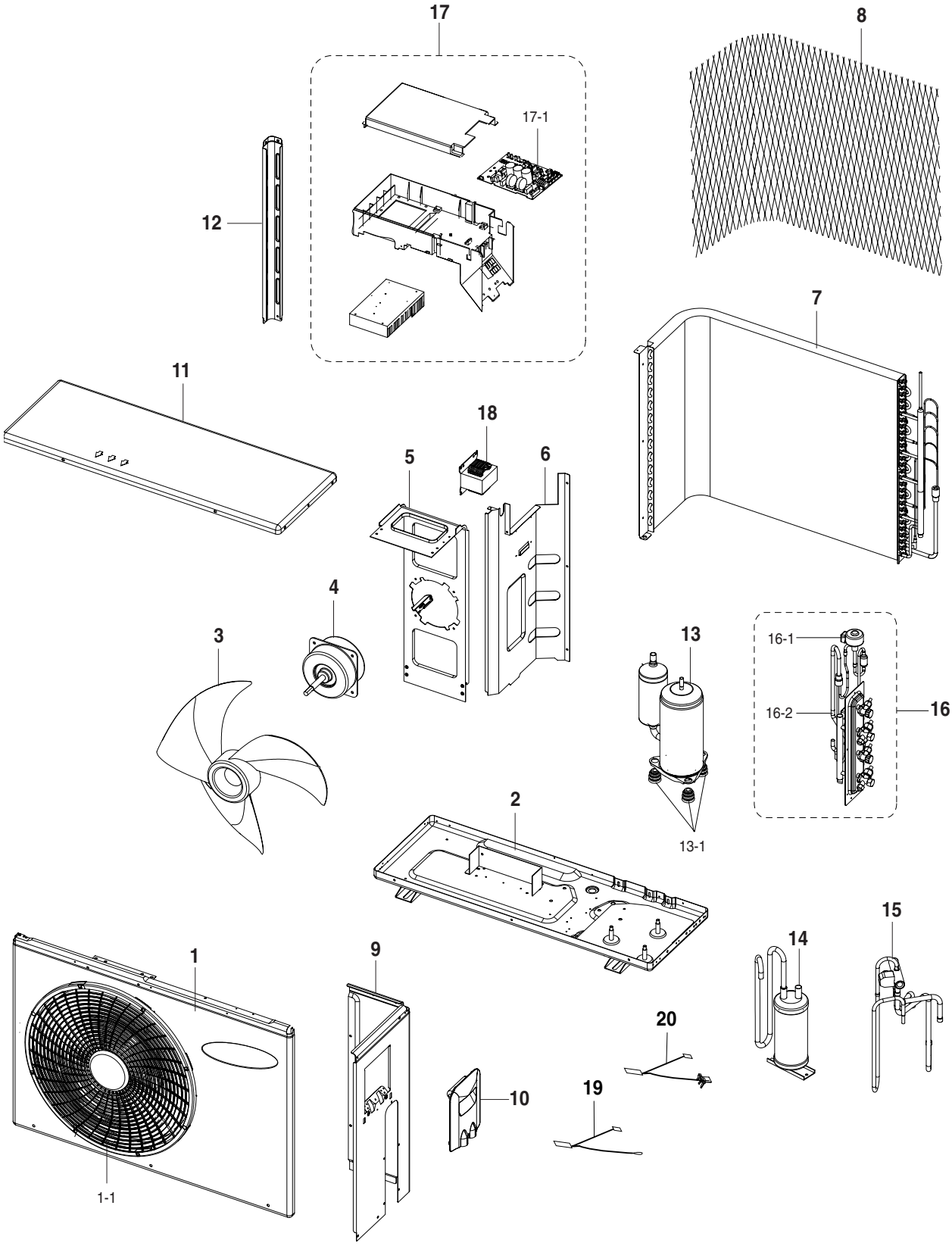
5-1-7 MH023FEEA/MH026FEEA/MH035FEEA



■ **Parts List**

No.	Code No.	Description	Specification	Q'TY	SA/SNA
1	DB90-02014A	ASS'Y CABINET BASE	ASS'Y	1	SA
2	DB64-01324A	ASS'Y CABINET SIDE LF	ASS'Y	1	SA
3	DB90-01951A	ASS'Y CABINET SIDE RH	ASS'Y	1	SA
4	DB90-01938A	ASS'Y COVER PIPE	ASS'Y	1	SA
5	DB90-01950A	ASS'Y COVER DRAIN PUMP	ABS T2.0	1	SA
6	DB64-01326A	CABINET TOP MOTOR	SGCC-M, T0.8	1	SA
7	DB90-02069A	ASS'Y CABINET TOP EVAP	ASS'Y	1	SA
8	DB61-02274A	PLATE HANGER	SGCC-M T2.0	2	SA
9	DB94-00712A	ASS'Y BRACKET OUTLET	ASS'Y	1	SA
10	DB61-02277A	BRACKET OUTLET SUB	SGCC-M, T0.8	1	SA
11	DB97-03385A	ASS'Y CUSHION BASE	ASS'Y	1	SA
12	DB96-05289A	ASS'Y EVAP UNIT	ASS'Y	1	SA
13	DB90-01978A	ASS'Y SUPPORT EVAP LF	ASS'Y	1	SA
14	DB90-01946A	ASS'Y SUPPORT EVAP RH	ASS'Y	1	SA
15	DB94-00768A	ASS'Y PARTITION	ASS'Y	1	SA
16	DB61-02282A	BRACKET MOTOR	SGCC-M T2.0	1	SA
17	DB99-00669A	ASS'Y BAND MOTOR	SINYA	1	SNA
18	DB31-00312A	MOTOR FAN	SINYA, SSR, PID	1	SA
19	DB67-00565A	BLOWER	ASS'Y, ABS, TORSIONAL BUSH	2	SA
20	DB90-01947A	ASS'Y CASE BLOWER UPPER	ASS'Y	2	SA
21	DB90-01948A	ASS'Y CASE BLOWER BOTTOM	ASS'Y	2	SA
22	DB94-00716A	ASS'Y DRAIN PAN	ASS'Y	1	SNA
23	DB93-03321C	ASS'Y CONTROL IN	ASS'Y	1	SA
23-1	DB90-01941A	ASS'Y CASE CONTROL	ASS'Y	1	SA
23-2	DB61-02287A	CASE PCB	ABS T2.5	1	SA
23-3	DB63-01237A	COVER CONTROL	SGCC-M T0.5	1	SA
23-4	DB61-40291A	HOLDER WIRE	PP BLACK	1	SNA
23-5	DB65-00105L	TERMINAL BLOCK 6P	6P, POWER	1	SNA
23-6	DB65-00105M	TERMINAL BLOCK 6P	6P, COMMUNICATION	1	SNA
23-7	DB26-10070G	TRANS POWER	230V, 50HZ	1	SNA
23-8	2301-001370	CAPACITOR	450V 1.5μF	1	SA
24	DB32-00142A	ASS'Y THERMISTOR	ASS'Y	1	SA
25	DB32-00141A	THERMISTOR EVAP	ASS'Y	1	SNA

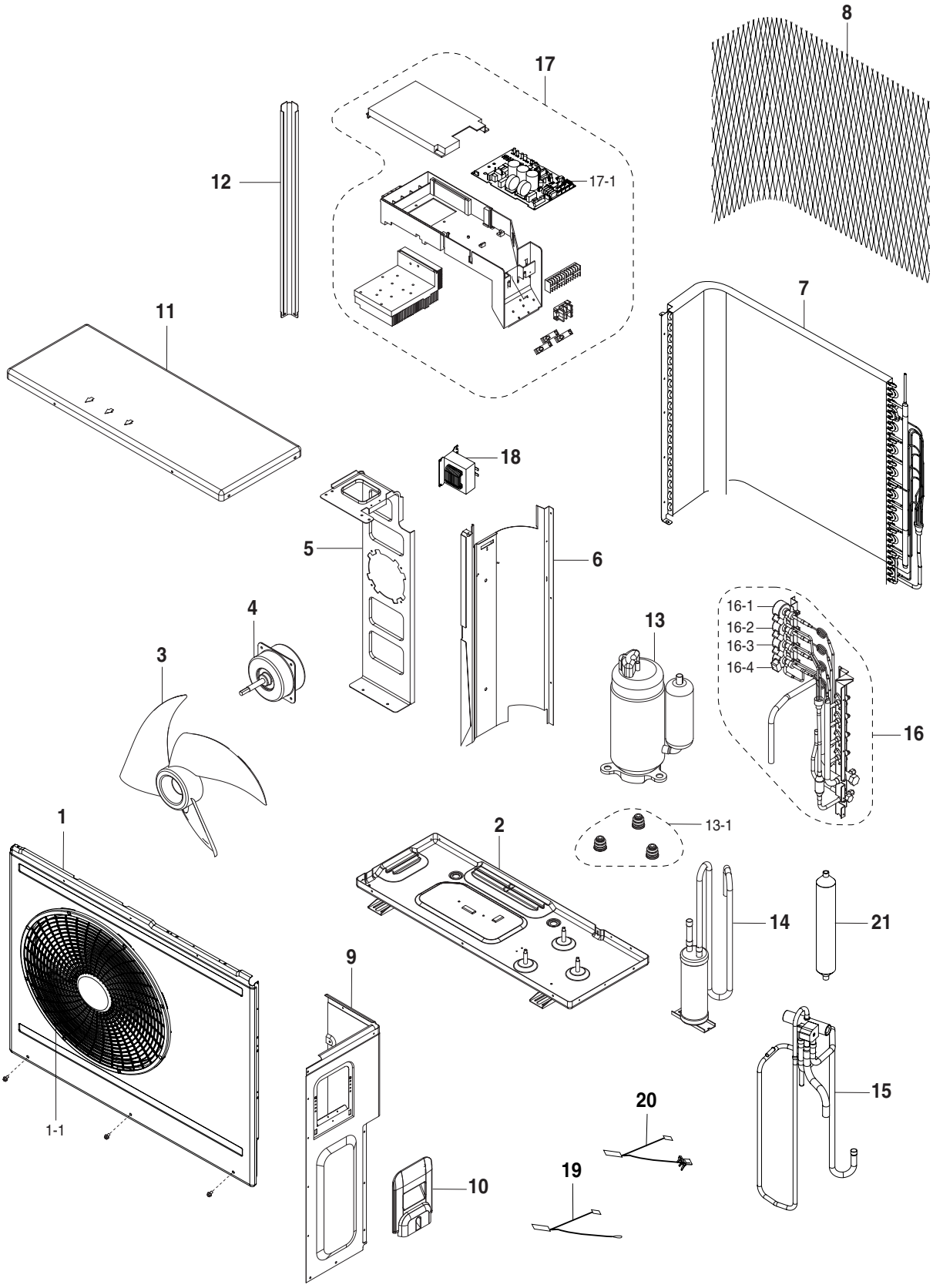
5-2-1 MH040FXEA2/MH052FXEA2/MH14VP2X/MH16VP2X/MH18VP2X/MH19VP2X/MH14VW2X/ MH16VW2X/MH18VW2X/MH19VW2X



■ **Parts List**

No.	Code No.	Description	Specification	Q'TY	SA/SNA
1	DB90-01364B	ASS'Y CABINET FRONT	ASS'Y	1	SA
1-1	DB63-00831A	GUARD FAN	PP,SC-90073R	1	SA
2	DB90-01908A	ASS'Y BASE OUT	ASS'Y	1	SNA
3	DB67-00438A	FAN PROPELLER	PP	1	SA
4	DB31-00268B	MOTOR FAN	SGCC-M	1	SA
5	DB90-00966B	ASS'Y BRACKET MOTOR	ASS'Y	1	SA
6	DB94-00694A	ASS'Y PARTITION	ASS'Y	1	SNA
7	DB96-04466A	ASS'Y CONDENSER	ASS'Y	1	SA
8	DB61-02364A	GUIDE SCREEN	P.E.H 100%	1	SC
9	DB90-01907A	ASS'Y CABINET SIDE	ASS'Y	1	SA
10	DB90-40176B	ASS'Y COVER CONTROL	ASS'Y	1	SA
11	DB90-10616R	ASS'Y CABINET UPPER	ASS'Y	1	SA
12	DB63-00343A	GUARD CONDENSER	SECC-P	1	SA
13	G4B135LU1EH	ROTARY COMPRESSOR	BLDC PERMANENT MAGNETIC MOTOR	1	SA
13-1	DB73-00070A	GROMMET-ISOLATOR	NR	3	SNA
14	DB96-04469A	ASS'Y TUBE SUCTION	ASS'Y	1	SA
15	DB99-00607A	ASS'Y VALVE 4-WAY	ASS'Y	1	SA
16	DB99-00608A	ASS'Y VALVE	ASS'Y	1	SA
16-1	DB96-04450A	ASS'Y TUBE EEV A	ASS'Y	1	SA
16-2	DB96-04451A	ASS'Y TUBE EEV B	ASS'Y	1	SA
17	DB93-03142A	ASS'Y CONTROL OUT	ASS'Y	1	SA
17-1	DB93-03143A	ASS'Y PCB MAIN	ASS'Y	1	SA
18	DB81-00534A	REACTOR	5MH±5%,40.0±5V	1	SA
19	DB32-00081C	THERMISTOR CONDENSER	103AT,204CTB	1	SA
20	DB32-00083G	THERMISTOR	103AT,204CTB	1	SA

5-2-2 MH068FXEA4/MH080FXEA4/MH30VP2X/MH30VW2X



■ **Parts List**

No.	Code No.	Description	Specification	Q'TY			SA/SNA
				MH30VP2X MH30VW2X	MH068FXEA4	MH080FXEA4	
1	DB90-01006B	ASS'Y CABINET FRONT	ASS'Y	1	1	1	SA
1-1	DB63-00831A	GUARD FAN	PP,SC-90073R	1	1	1	SA
2	DB90-01049E	ASS'Y BASE OUT	ASS'Y	1	1	1	SNA
3	DB67-00438A	FAN PROPELLER	PP(LUPOL LW4302)	1	1	1	SA
4	DB31-00268A	MOTOR FAN	SGCC-M	1	1	1	SA
5	DB90-01114B	ASS'Y BASE MOTOR	ASS'Y	1	1	1	SNA
6	DB94-00308B	ASS'Y PARTITION	ASS'Y	1	1	1	SNA
7	DB96-03808B	ASS'Y COND	ASS'Y	1	1	1	SNA
8	DB64-00765A	SCREEN GUARD FIN	P.E.H 100%	1	1	1	SA
9	DB90-01008B	ASS'Y CABINET SIDE	ASS'Y	1	1	1	SA
10	DB90-01742A	ASS'Y COVER CONTROL	ASS'Y	1	1	1	SA
11	DB90-01007B	ASS'Y COVER TOP	ASS'Y	1	1	1	SA
12	DB63-01058A	GUARD COND	SECC-P	1	1	1	SA
13	G5T360FU1EK	ROTARY COMPRESSOR	BLDC INVERTER	1	1	1	SA
13-1	DB73-00082A	GROMMET-ISOLATOR	NR	3	3	3	SNA
14	DB96-03803B	ASS'Y TUBE SUCTION	ASS'Y	1	1	1	SA
15	DB96-03788A	ASS'Y 4-WAY VALVE	ASS'Y	1	1	1	SA
16	DB99-00557A	ASS'Y VALVE	ASS'Y	1	1	1	SA
16-1	DB96-03789A	ASS'Y TUBE EEV A	ASS'Y	1	1	1	SA
16-2	DB96-03790A	ASS'Y TUBE EEV B	ASS'Y	1	1	1	SA
16-3	DB96-03791A	ASS'Y TUBE EEV C	ASS'Y	1	1	1	SA
16-4	DB96-03792A	ASS'Y TUBE EEV D	ASS'Y	1	1	1	SA
17	DB93-02892A	ASS'Y CONTROL OUT	ASS'Y	1	-	1	SA
	DB93-02892B	ASS'Y CONTROL OUT	ASS'Y	-	1	-	SA
17-1	DB93-02893A	ASS'Y PCB MAIN	ASS'Y	1	1	1	SA
18	DB81-00534A	REACTOR	5mH±20%,34.0±5%	1	1	1	SA
19	DB32-00081B	THERMISTOR COND	103AT,204CTB	1	1	1	SA
20	DB32-00083D	THERMISTOR WIRE OUT/DISCHARGE	103AT,204CTB	1	1	1	SA
21	DB62-02929A	TUBE RECEIVER	R410A,t=1.52mm	1	1	1	SNA

6. Electrical Parts List

■ MAIN PCB : DB93-02779B(MH✳✳✳FPEA✳/MH✳✳VP2-✳✳)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
BD71	0402-001298	DIODE-BRIDGE	DF06S,600V,1A,SMD-4,TP	1	SNA	
BZ61	3002-001129	BUZZER-PIEZO	85DB,-,-,2KHz,-	1	SNA	
C102	2401-003895	C-AL	15uF,20%,450V,GP,TP,12.5x20mm,5	1	SNA	
C103	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C104	2401-000151	C-AL	1000uF,20%,25V,GP,TP,10x20,5	1	SNA	
C105	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C106	2401-001363	C-AL	470uF,20%,16V,GP,TP,10x12.5,5	1	SNA	
C107	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C108	2201-000987	C-CERAMIC,DISC	2.2nF,20%,400V,Y5U,BK,12.5x6mm,10	1	SNA	
C109	2201-000987	C-CERAMIC,DISC	2.2nF,20%,400V,Y5U,BK,12.5x6mm,10	1	SNA	
C201	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C202	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C203	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C211	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C212	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C301	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C302	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C303	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C304	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C305	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C306	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C307	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C311	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C312	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C313	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C314	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C321	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C322	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C323	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C401	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C402	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C403	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C501	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C502	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C503	2203-000444	C-CER,CHIP	1nF,10%,50V,X7R,TP,2012,-	1	SNA	
C511	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C601	2401-002300	C-AL	47uF,20%,50V,GP,TP,6.3x11,5	1	SNA	
C805	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C806	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C807	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	

■ MAIN PCB : DB93-02779B(MH✳✳✳FPEA✳/MH✳✳VP2-✳✳)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
C808	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C811	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C812	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C813	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C814	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C815	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C816	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C817	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C911	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C912	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C913	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C914	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
CD11	0406-001086	DIODE-TVS	ST02D-200,185/200/215V,200W,DO-214	1	SNA	
CD12	0406-001086	DIODE-TVS	ST02D-200,185/200/215V,200W,DO-214	1	SNA	
CD31	0406-001109	DIODE-TVS	SAC5.0,7.6/-/-V,500W,DO-15	1	SNA	
CD32	0406-001109	DIODE-TVS	SAC5.0,7.6/-/-V,500W,DO-15	1	SNA	
CD33	0406-001109	DIODE-TVS	SAC5.0,7.6/-/-V,500W,DO-15	1	SNA	
CD34	0406-001109	DIODE-TVS	SAC5.0,7.6/-/-V,500W,DO-15	1	SNA	
CN31	3711-000177	CONNECTOR-HEADER	1WALL,2P,1R,3.96mm,STRAIGHT,SN	1	SNA	
CN32	3711-000176	CONNECTOR-HEADER	1WALL,2P,1R,3.96mm,STRAIGHT,SN	1	SNA	
CN41	3711-004379	CONNECTOR-HEADER	BOX,4P,1R,2mm,STRAIGHT,SN	1	SNA	
CN42	3711-003942	CONNECTOR-HEADER	BOX,2P,1R,2mm,STRAIGHT,SN	1	SNA	
CN43	3711-000178	CONNECTOR-HEADER	1WALL,2P,1R,3.96mm,STRAIGHT,SN,W	1	SNA	
CN44	3711-000879	CONNECTOR-HEADER	BOX,3P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN45	3711-004349	CONNECTOR-HEADER	BOX,3P,1R,2mm,STRAIGHT,SN	1	SNA	
CN61	3711-004484	CONNECTOR-HEADER	BOX,5P,1R,2mm,STRAIGHT,SN	1	SNA	
CN62	3711-001001	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN63	3711-000999	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN64	3711-000999	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN71	3711-003404	CONNECTOR-HEADER	1WALL,2P,1R,7.92mm,STRAIGHT,SN,B	1	SNA	
CN72	3711-000262	CONNECTOR-HEADER	1WALL,3P,1R,7.92mm,STRAIGHT,SN,W	1	SNA	
CN73	3711-000203	CONNECTOR-HEADER	1WALL,2P,1R,7.92mm,STRAIGHT,SN,W	1	SNA	
CN82	3711-005206	CONNECTOR-HEADER	BOX,3P,1R,2mm,STRAIGHT,SN,BLU	1	SNA	
CN91	3711-004122	CONNECTOR-HEADER	BOX,14P,1R,2mm,STRAIGHT,SN	1	SNA	
CN93	3711-004182	CONNECTOR-HEADER	BOX,10P,1R,2mm,STRAIGHT,SN,NTR	1	SNA	
D101	0402-001194	DIODE-RECTIFIER	SHG2D,200V,2A,-,TP	1	SNA	
D901	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D902	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D903	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D904	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	

■ MAIN PCB : DB93-02779B(MH✳✳✳FPEA✳/MH✳✳VP2-✳✳)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
D905	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D906	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D907	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D908	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D909	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D910	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D911	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D912	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D913	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D914	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D915	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D916	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D917	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D918	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D919	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D920	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
F701	3602-001012	FUSE-BLOCK	500V,-,100M	1	SNA	
F701_1	3601-000263	FUSE-CARTRIDGE	250V,3.15A,TIME-LAG,GLASS,5x20mm	1	SNA	
F702	3601-001209	FUSE-RADIAL LEAD	250V,1A,TIME-LAG,-,8.5x8mm	1	SNA	
FT71	DB27-00011A	COIL CHOKE	LS404190K,AS-S660,19mH,+50,-30%,-,300M	1	SNA	
IC01	1203-002545	IC-PWM CONTROLLER	266,DIP,8P,300MIL,PLASTIC,-0.3	1	SNA	
IC02	1203-000274	IC-POSI.FIXED REG.	7805,TO-220,3P,-,PLASTIC,4.8/5	1	SNA	
IC03	1203-003334	IC-RESET	S-801,SOT-23,5P,2.9x1.6mm,PLASTIC,3.716	1	SNA	
IC04*	DB09-00346A	IC MICOM	MB90F822,-,80 P,5 V,24 MHz,STM-0466-OS,-	1	SA	
IC05	0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	1	SNA	
IC06	0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	1	SNA	
IC07	0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	1	SNA	
IC08	1003-001462	IC-SOURCE DRIVER	TD62783AFW,SOL,18P,-,8,-500mA,TP	1	SNA	
IC18	1006-001297	IC-BUS TRANSCEIVER	485,DIP,8P,6.4x9.7mm,SINGLE,ST	1	SNA	
IC19	1006-001297	IC-BUS TRANSCEIVER	485,DIP,8P,6.4x9.7mm,SINGLE,ST	1	SNA	
IC20	0801-000393	IC-CMOS LOGIC	74HC86,OR GATE,SOP,14,150MIL,QUAD,S	1	SNA	
IC51	1103-001175	IC-EEPROM	93LC56,128x16,SOP,8P,5x4mm,2.5/6.0V,-40	1	SNA	
NTC1	1404-001274	THERMISTOR-NTC	22ohm,1.4A,3100K,9.5mW/C,-,7.0,-	1	SNA	
PC01	0604-000117	PHOTO-COUPLER	TR,130-260%,200mW,DIP-4,ST	1	SNA	
PC02	0604-001003	PHOTO-COUPLER	TR,50-150%,200mW,DIP-4,ST	1	SNA	
PC03	0604-001148	PHOTO-COUPLER	TR,50-600%,200mW,SMD-4,TP	1	SNA	
PCB	DB41-00294A	PBA LOGIC BOARD	DVM G1/G2,-,FR-4 ,T-1.6,-,-,220V	1	SNA	
Q201	0501-000534	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
Q311	0501-000534	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
Q501	0501-000534	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	

■ MAIN PCB : DB93-02779B(MH✳✳✳FPEA✳/MH✳✳VP2-✳✳)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
Q601	0501-000534	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
Q602	0501-002296	TR-SMALL SIGNAL	MMST2907A,PNP,200mW,SMT3,TP,100-3	1	SNA	
Q603	0501-000534	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
R101	2007-000290	R-CHIP	100ohm,5%,1/8W,TP,2012	1	SNA	
R102	2007-000493	R-CHIP	2.2Kohm,5%,1/8W,TP,2012	1	SNA	
R105	2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	1	SNA	
R11	2007-000023	R-CHIP	120ohm,5%,1/8W,TP,2012	1	SNA	
R12	2007-000023	R-CHIP	120ohm,5%,1/8W,TP,2012	1	SNA	
R201	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R202	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R203	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R204	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R205	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R206	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R207	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R208	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R209	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R210	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R211	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R212	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R302	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R303	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R304	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R305	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R306	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R307	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R308	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R312	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R313	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R315	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	SNA	
R316	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	SNA	
R317	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	SNA	
R318	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	SNA	
R319	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R320	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R401	2007-001067	R-CHIP	6.8Kohm,1%,1/8W,TP,2012	1	SNA	
R402	2007-000766	R-CHIP	330ohm,5%,1/8W,TP,2012	1	SNA	
R403	2007-001067	R-CHIP	6.8Kohm,1%,1/8W,TP,2012	1	SNA	
R404	2007-000766	R-CHIP	330ohm,5%,1/8W,TP,2012	1	SNA	
R405	2007-001067	R-CHIP	6.8Kohm,1%,1/8W,TP,2012	1	SNA	

■ MAIN PCB : DB93-02779B(MH✳✳✳FPEA✳/MH✳✳VP2-✳✳)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
R406	2007-000766	R-CHIP	330ohm,5%,1/8W,TP,2012	1	SNA	
R501	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R502	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R503	2007-001071	R-CHIP	6.8Kohm,5%,1/8W,TP,2012	1	SNA	
R505	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R506	2007-000872	R-CHIP	4.7Kohm,5%,1/8W,TP,2012	1	SNA	
R507	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R511	2007-000941	R-CHIP	47Kohm,5%,1/8W,TP,2012	1	SNA	
R512	2007-000941	R-CHIP	47Kohm,5%,1/8W,TP,2012	1	SNA	
R601	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R602	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R603	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R604	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R605	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R606	2007-000872	R-CHIP	4.7Kohm,5%,1/8W,TP,2012	1	SNA	
R607	2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	1	SNA	
R608	2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	1	SNA	
R609	2007-000030	R-CHIP	560ohm,5%,1/8W,TP,2012	1	SNA	
R610	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R911	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R912	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R913	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R914	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
RY01	3501-001248	RELAY-MINIATURE	12V,-,11.7mA,DPDT,4mS,4mS	1	SNA	
SS71	3502-000115	SSR	12Vdc,-,2A,1mS,1mS	1	SNA	
ST11	DB26-00015A	TRANS SWITCHING	-,JT1916-09,-,310V,FERRITE,-,EI19	1	SNA	
SW01	3406-001098	SWITCH-ROTARY	240V AC,25A,6P(10C),L14mm	1	SNA	
SW02	3406-001098	SWITCH-ROTARY	240V AC,25A,6P(10C),L14mm	1	SNA	
SW03	DB34-00009A	SWITCH-DIGITAL	PT65 103,ROTARY DIP,-,DC24V MAX,0.	1	SNA	
SW04	DB34-00009A	SWITCH-DIGITAL	PT65 103,ROTARY DIP,-,DC24V MAX,0.	1	SNA	
SW05	3407-000121	SWITCH-DIP	24V,300mA,SLIDE,STANDARD	1	SNA	
VA71	1405-000154	VARISTOR	560V,2500A,17.5x7.5mm,TP	1	SNA	
X501	2802-001179	RESONATOR-CERAMIC	4MHz,0.5%,BK,8x3x5.5mm	1	SNA	
XC71	2301-001439	C-FILM,LEAD-PPF	220nF,10%,275V,BK,18x10x15.8mm,15	1	SNA	
XC72	2301-001220	C-FILM,LEAD-PPF	100nF,10%,275V,BK,18x6x12,15	1	SNA	
ZD11	0403-000252	DIODE-ZENER	BZX84C3V6,3.4-3.8V,350mW,SOT-23,TP	1	SNA	
ZD12	0403-001285	DIODE-ZENER	BZX84-C11,10.4-11.6V,350mW,SOT-23,TP	1	SNA	

■ MAIN PCB : DB93-03542A(MH023/026/035FWEA,MH✳✳VW2-✳✳)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
R11	2007-000023	DIODE-BRIDGE	120ohm,5%,1/8W,TP,2012	1	SNA	
R12	2007-000023	BUZZER-PIEZO	120ohm,5%,1/8W,TP,2012	1	SNA	
BD71	0402-001298	C-AL	DF06S,600V,1A,SMD-4,TP	1	SNA	
BZ61	3002-001129	C-CER,CHIP	85DB,-,-,2KHz,-	1	SNA	
C102	2401-003895	C-AL	15uF,20%,450V,GP,TP,12.5x20mm	1	SNA	
C103	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C104	2401-000151	C-AL	1000uF,20%,25V,GP,TP,10x20,5	1	SNA	
C105	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C106	2401-000037	C-CERAMIC,DISC	470uF,20%,16V,GP,TP,8x11.5,5	1	SNA	
C107	2203-000192	C-CERAMIC,DISC	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C108	2201-000987	C-CER,CHIP	2.2nF,20%,400V,Y5U,BK,12.5x6mm	1	SNA	
C109	2201-000987	C-CER,CHIP	2.2nF,20%,400V,Y5U,BK,12.5x6mm	1	SNA	
C201	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C202	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C203	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C211	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C212	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C301	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,1608	1	SNA	
C302	2203-000189	C-CER,CHIP	100nF,+80-20%,25V,Y5V,TP,1608	1	SNA	
C303	2203-000189	C-CER,CHIP	100nF,+80-20%,25V,Y5V,TP,1608	1	SNA	
C304	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C305	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C306	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C307	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C311	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,1608	1	SNA	
C312	2203-000189	C-CER,CHIP	100nF,+80-20%,25V,Y5V,TP,1608	1	SNA	
C313	2203-000189	C-CER,CHIP	100nF,+80-20%,25V,Y5V,TP,1608	1	SNA	
C314	2203-000192	C-CER,CHIP,	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C315	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C316	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C321	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C322	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C323	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C401	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C402	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C403	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C501	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C502	2203-000192	C-AL	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C511	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C601	2401-002300	C-CER,CHIP	47uF,20%,50V,GP,TP,6.3x11,5	1	SNA	

■ MAIN PCB : DB93-03542A(MH023/026/035FWEA,MH✳✳VW2-✳✳)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
C805	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C806	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C807	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C808	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C811	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C812	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C813	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C814	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C815	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C816	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C817	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C911	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C912	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C913	2203-001562	DIODE-TVS	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C917	2203-001562	DIODE-TVS	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C918	2203-000192	DIODE-TVS	100nF,+80-20%,50V,Y5V,2012	1	SNA	
CD11	0406-001086	CONNECTOR-HEADER	ST02D-200,185/200/215V,200W,DO	1	SNA	
CN10	3711-005716	CONNECTOR-HEADER	BOX,10P,1R,2mm,STRAIGHT,SN,BLK	1	SNA	
CN31	3711-000177	CONNECTOR-HEADER	1WALL,2P,1R,3.96mm,STRAIGHT,SN	1	SNA	
CN32	3711-000178	CONNECTOR-HEADER	1WALL,2P,1R,3.96mm,STRAIGHT,SN	1	SNA	
CN33	3711-000176	CONNECTOR-HEADER	1WALL,2P,1R,3.96mm,STRAIGHT,SN	1	SNA	
CN41	3711-004379	CONNECTOR-HEADER	BOX,4P,1R,2mm,STRAIGHT,SN	1	SNA	
CN42	3711-003942	CONNECTOR-HEADER	BOX,2P,1R,2mm,STRAIGHT,SN	1	SNA	
CN44	3711-000879	CONNECTOR-HEADER	BOX,3P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN60	3711-004484	CONNECTOR-HEADER	BOX,5P,1R,2mm,STRAIGHT,SN	1	SNA	
CN61	3711-002001	CONNECTOR-HEADER	BOX,20P,2R,2mm,STRAIGHT,SN,BLK	1	SNA	
CN71	3711-003404	C-FILM,LEAD-PPF	1WALL,2P,1R,7.92mm,STRAIGHT,SN...	1	SNA	
CN73	3711-000262	DIODE-RECTIFIER	1WALL,3P,1R,7.92mm,STRAIGHT,SN...	1	SNA	
CN82	3711-005206	FUSE-CLIP	BOX,3P,1R,2mm,STRAIGHT,SN,BLU	1	SNA	
CN85	3711-005205	FUSE-RADIAL LEAD	BOX,3P,1R,2mm,STRAIGHT,SN,RED	1	SNA	
CR71	2301-001251	COIL CHOKE	1.2uF,10%,450Vac,BK,38x18x30,3	1	SNA	
D101	0402-001194	IC-PWM CONTROLLER	SHG2D,200V,2A,-,TP	1	SNA	
F701	3602-000147	IC-POSI.FIXED REG	250V,7.5A,30mohm	1	SNA	
F702	3601-001209	IC-RESET	250V,1A,TIME-LAG,-,8.5x8mm	1	SNA	
FT71	DB27-00011A	IC MICOM	LS404190K,AS-S660,19mH,+50,-30	1	SNA	
IC01	1203-002545	TR-ARRAY	266,DIP,8P,300MIL,PLASTIC,-0.3	1	SNA	
IC02	1203-000429	TR-ARRAY	78L05A,TO-92,3P,-,PLASTIC,4.6	1	SNA	
IC03	1203-003334	TR-ARRAY	S-801,SOT-23,5P,2.9x1.6mm,PLASTIC	1	SNA	
IC04	DB09-00346B	IC-SOURCE DRIVER	MB90F823,-,80 P,5 V,24 MHz,STM	1	SNA	
IC05	0506-000175	IC-BUS TRANSCEIVER	2003,NPN,7,1W,SOP-16,ST,1000	1	SNA	

■ MAIN PCB : DB93-03542A(MH023/026/035FWEA,MH✳✳VW2-✳✳)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
IC06	0506-000175	IC-BUS TRANSCEIVER	2003,NPN,7,1W,SOP-16,ST,1000	1	SNA	
IC07	0506-000175	IC-CMOS LOGIC	2003,NPN,7,1W,SOP-16,ST,1000	1	SNA	
IC08	1003-001462	IC-EEPROM	TD62783AFW,SOL,18P,-,8,-500mA	1	SNA	
IC18	1006-001325	THERMISTOR-NTC	1487,SO,8P,4.9x3.8 mm,SINGLE,S	1	SNA	
IC19	1006-001325	PHOTO-COUPLER	1487,SO,8P,4.9x3.8 mm,SINGLE,S	1	SNA	
IC20	0801-000393	PHOTO-COUPLER	74HC86,OR GATE,SOP,14P,150MIL	1	SNA	
IC51	1103-001175	PHOTO-COUPLER	93LC56,128x16,SOP,8P,5x4mm,2.5	1	SNA	
NTC1	1404-001274	TR-SMALL SIGNAL	22ohm,1.4A,3100K,9.5mW/C,-,7.0	1	SNA	
PC01	0604-000117	TR-SMALL SIGNAL	TR,130-260%,200mW,DIP-4,ST	1	SNA	
PC02	0604-001003	TR-SMALL SIGNAL	TR,50-150%,200mW,DIP-4,ST	1	SNA	
PC03	0604-001148	TR-SMALL SIGNAL	TR,50-600%,200mW,SMD-4,TP	1	SNA	
Q201	0501-000534	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
Q311	0501-000534	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
Q501	0501-000534	R-CHIP	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
Q601	0501-000534	R-CHIP	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
Q602	0501-002296	R-COMPOSITION	MMST2907A,PNP,200mW,SMT3,TP,10	1	SNA	
Q603	0501-000534	R-COMPOSITION	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
R101	2007-000290	R-CHIP	100ohm,5%,1/8W,TP,2012	1	SNA	
R102	2007-000493	R-CHIP	2.2Kohm,5%,1/8W,TP,2012	1	SNA	
R103	2002-001104	R-CHIP	12Mohm,5%,1/2W,AA,TP,3.4x9mm	1	SNA	
R104	2002-001104	R-CHIP	12Mohm,5%,1/2W,AA,TP,3.4x9mm	1	SNA	
R105	2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	1	SNA	
R201	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R202	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R203	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R204	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R205	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R206	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R207	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R208	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R209	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R210	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R211	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R212	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R302	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R303	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R304	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R305	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R306	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R307	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	

■ MAIN PCB : DB93-03542A(MH023/026/035FWEA,MH✳✳VW2-✳✳)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
R312	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R313	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R315	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	SNA	
R316	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	SNA	
R317	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	SNA	
R318	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	SNA	
R319	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R320	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R350	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R401	2007-001067	R-CHIP	6.8Kohm,1%,1/8W,TP,2012	1	SNA	
R402	2007-000766	R-CHIP	330ohm,5%,1/8W,TP,2012	1	SNA	
R403	2007-001067	R-CHIP	6.8Kohm,1%,1/8W,TP,2012	1	SNA	
R404	2007-000766	R-CHIP	330ohm,5%,1/8W,TP,2012	1	SNA	
R405	2007-001067	R-CHIP	6.8Kohm,1%,1/8W,TP,2012	1	SNA	
R406	2007-000766	R-CHIP	330ohm,5%,1/8W,TP,2012	1	SNA	
R501	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R502	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R503	2007-001071	R-CHIP	6.8Kohm,5%,1/8W,TP,2012	1	SNA	
R505	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R506	2007-000872	R-CHIP	4.7Kohm,5%,1/8W,TP,2012	1	SNA	
R511	2007-000941	R-CHIP	47Kohm,5%,1/8W,TP,2012	1	SNA	
R515	2007-000941	R-CHIP	47Kohm,5%,1/8W,TP,2012	1	SNA	
R601	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R602	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R603	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R604	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R605	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R606	2007-000872	R-CHIP	4.7Kohm,5%,1/8W,TP,2012	1	SNA	
R607	2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	1	SNA	
R608	2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	1	SNA	
R609	2007-000030	R-CHIP	560ohm,5%,1/8W,TP,2012	1	SNA	
R610	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R803	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R911	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R912	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R913	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R917	2007-000300	RELAY-MINIATURE	10Kohm,5%,1/8W,TP,2012	1	SNA	
R918	2007-000300	SSR	10Kohm,5%,1/8W,TP,2012	1	SNA	
R919	2007-000766	TRANS SWITCHING	330ohm,5%,1/8W,TP,2012	1	SNA	
RY01	3501-001248	VARISTOR	12V,-,11.7mA,DPDT,4mS,4mS	1	SNA	

■ MAIN PCB : DB93-03542A(MH023/026/035FWEA,MH✳✳VW2-✳✳)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
SS71	3502-000115	RESONATOR-CERAMIC	12Vdc,-,2A,1mS,1mS	1	SNA	
ST11	DB26-00015A	C-FILM,LEAD-PPF	-,JT1916-09,-,310V,FERRITE,-,E	1	SNA	
VA71	1405-000154	C-FILM,LEAD-PPF	560V,2500A,17.5x7.5mm,TP	1	SNA	
X501	2802-001179	DIODE-ZENER	4MHz,0.5%,BK,8x3x5.5mm	1	SNA	
XC71	2301-001439	DIODE-ZENER	220nF,10%,275V,BK,18x10x15.8mm	1	SNA	
XC72	2301-001220	C-FILM,LEAD-PPF	100nF,10%,275V,BK,18x6x12,15	1	SNA	
ZD11	0403-000252	DIODE-ZENER	BZX84C3V6,3.4-3.8V,350mW,SOT-2	1	SNA	
ZD12	0403-001285	DIODE-ZENER	BZX84-C11,10.4-11.6V,350mW,SOT	1	SNA	
CD312	0406-001204	DIODE-TVS	SMBJ5.0CA,6.4/-/7.07V,600W,SMB	1	SNA	
CD334	0406-001204	DIODE-TVS	SMBJ5.0CA,6.4/-/7.07V,600W,SMB	1	SNA	
F701_1	3601-000263	FUSE-CARTRIDGE	250V,3.15A,TIME-LAG,GLASS,5x20	1	SNA	

■ MAIN PCB : DB93-03542B(MH052FWEA)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
R11	2007-000023	DIODE-BRIDGE	120ohm,5%,1/8W,TP,2012	1	SNA	
R12	2007-000023	BUZZER-PIEZO	120ohm,5%,1/8W,TP,2012	1	SNA	
BD71	0402-001298	C-AL	DF06S,600V,1A,SMD-4,TP	1	SNA	
BZ61	3002-001129	C-CER,CHIP	85DB,-,-,2KHz,-	1	SNA	
C102	2401-003895	C-AL	15uF,20%,450V,GP,TP,12.5x20mm	1	SNA	
C103	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C104	2401-000151	C-AL	1000uF,20%,25V,GP,TP,10x20,5	1	SNA	
C105	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C106	2401-000037	C-CERAMIC,DISC	470uF,20%,16V,GP,TP,8x11.5,5	1	SNA	
C107	2203-000192	C-CERAMIC,DISC	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C108	2201-000987	C-CER,CHIP	2.2nF,20%,400V,Y5U,BK,12.5x6mm	1	SNA	
C109	2201-000987	C-CER,CHIP	2.2nF,20%,400V,Y5U,BK,12.5x6mm	1	SNA	
C201	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C202	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C203	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C211	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C212	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C301	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,1608	1	SNA	
C302	2203-000189	C-CER,CHIP	100nF,+80-20%,25V,Y5V,TP,1608	1	SNA	
C303	2203-000189	C-CER,CHIP	100nF,+80-20%,25V,Y5V,TP,1608	1	SNA	
C304	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C305	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C306	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C307	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C311	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,1608	1	SNA	
C312	2203-000189	C-CER,CHIP	100nF,+80-20%,25V,Y5V,TP,1608	1	SNA	
C313	2203-000189	C-CER,CHIP	100nF,+80-20%,25V,Y5V,TP,1608	1	SNA	
C314	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C315	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C316	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C321	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C322	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C323	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C401	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C402	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C403	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C501	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C502	2203-000192	C-AL	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C511	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C601	2401-002300	C-CER,CHIP	47uF,20%,50V,GP,TP,6.3x11,5	1	SNA	

■ MAIN PCB : DB93-03542B(MH052FWEA)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
C805	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C806	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C807	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C808	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C811	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C812	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C813	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C814	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C815	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C816	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C817	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,2012	1	SNA	
C911	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C912	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C913	2203-001562	DIODE-TVS	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C917	2203-001562	DIODE-TVS	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA	
C918	2203-000192	DIODE-TVS	100nF,+80-20%,50V,Y5V,2012	1	SNA	
CD11	0406-001086	CONNECTOR-HEADER	ST02D-200,185/200/215V,200W,DO	1	SNA	
CN10	3711-005716	CONNECTOR-HEADER	BOX,10P,1R,2mm,STRAIGHT,SN,BLK	1	SNA	
CN31	3711-000177	CONNECTOR-HEADER	1WALL,2P,1R,3.96mm,STRAIGHT,SN	1	SNA	
CN32	3711-000178	CONNECTOR-HEADER	1WALL,2P,1R,3.96mm,STRAIGHT,SN	1	SNA	
CN33	3711-000176	CONNECTOR-HEADER	1WALL,2P,1R,3.96mm,STRAIGHT,SN	1	SNA	
CN41	3711-004379	CONNECTOR-HEADER	BOX,4P,1R,2mm,STRAIGHT,SN	1	SNA	
CN42	3711-003942	CONNECTOR-HEADER	BOX,2P,1R,2mm,STRAIGHT,SN	1	SNA	
CN44	3711-000879	CONNECTOR-HEADER	BOX,3P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN60	3711-004484	CONNECTOR-HEADER	BOX,5P,1R,2mm,STRAIGHT,SN	1	SNA	
CN61	3711-002001	CONNECTOR-HEADER	BOX,20P,2R,2mm,STRAIGHT,SN,BLK	1	SNA	
CN71	3711-003404	C-FILM,LEAD-PPF	1WALL,2P,1R,7.92mm,STRAIGHT,SN	1	SNA	
CN73	3711-000262	DIODE-RECTIFIER	1WALL,3P,1R,7.92mm,STRAIGHT,SN	1	SNA	
CN82	3711-005206	FUSE-CLIP	BOX,3P,1R,2mm,STRAIGHT,SN,BLU	1	SNA	
CN85	3711-005205	FUSE-RADIAL LEAD	BOX,3P,1R,2mm,STRAIGHT,SN,RED	1	SNA	
CR71	2301-001371	COIL CHOKE	2000nF,+10-5%,450V,BK,38x19x29	1	SNA	
D101	0402-001194	IC-PWM CONTROLLER	SHG2D,200V,2A,-,TP	1	SNA	
F701	3602-000147	IC-POSI.FIXED REG	250V,7.5A,30mohm	1	SNA	
F702	3601-001209	IC-RESET	250V,1A,TIME-LAG,-,8.5x8mm	1	SNA	
FT71	DB27-00011A	IC MICOM	LS404190K,AS-S660,19mH,+50,-30	1	SNA	
IC01	1203-002545	TR-ARRAY	266,DIP,8P,300MIL,PLASTIC,-0.3	1	SNA	
IC02	1203-000429	TR-ARRAY	78L05A,TO-92,3P,-,PLASTIC,4.6	1	SNA	
IC03	1203-003334	TR-ARRAY	S-801,SOT-23,5P,2.9x1.6mm,PLASTIC	1	SNA	
IC04	DB09-00346B	IC-SOURCE DRIVER	MB90F823,-,80 P,5 V,24 MHz,STM	1	SNA	
IC05	0506-000175	IC-BUS TRANSCEIVER	2003,NPN,7,1W,SOP-16,ST,1000	1	SNA	

■ MAIN PCB : DB93-03542B(MH052FWEA)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
IC06	0506-000175	IC-BUS TRANSCEIVER	2003,NPN,7,1W,SOP-16,ST,1000	1	SNA	
IC07	0506-000175	IC-CMOS LOGIC	2003,NPN,7,1W,SOP-16,ST,1000	1	SNA	
IC08	1003-001462	IC-EEPROM	TD62783AFW,SOL,18P,-,8,-500mA	1	SNA	
IC18	1006-001325	THERMISTOR-NTC	1487,SO,8P,4.9x3.8 mm,SINGLE,S	1	SNA	
IC19	1006-001325	PHOTO-COUPLER	1487,SO,8P,4.9x3.8 mm,SINGLE,S	1	SNA	
IC20	0801-000393	PHOTO-COUPLER	74HC86,OR GATE,SOP,14P,150MIL	1	SNA	
IC51	1103-001175	PHOTO-COUPLER	93LC56,128x16,SOP,8P,5x4mm,2.5	1	SNA	
NTC1	1404-001274	TR-SMALL SIGNAL	22ohm,1.4A,3100K,9.5mW/C,-,7.0	1	SNA	
PC01	0604-000117	TR-SMALL SIGNAL	TR,130-260%,200mW,DIP-4,ST	1	SNA	
PC02	0604-001003	TR-SMALL SIGNAL	TR,50-150%,200mW,DIP-4,ST	1	SNA	
PC03	0604-001148	TR-SMALL SIGNAL	TR,50-600%,200mW,SMD-4,TP	1	SNA	
Q201	0501-000534	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
Q311	0501-000534	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
Q501	0501-000534	R-CHIP	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
Q601	0501-000534	R-CHIP	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
Q602	0501-002296	R-COMPOSITION	MMST2907A,PNP,200mW,SMT3,TP,10	1	SNA	
Q603	0501-000534	R-COMPOSITION	2SC2412K,NPN,200mW,SOT-23,TP,1	1	SNA	
R101	2007-000290	R-CHIP	100ohm,5%,1/8W,TP,2012	1	SNA	
R102	2007-000493	R-CHIP	2.2Kohm,5%,1/8W,TP,2012	1	SNA	
R103	2002-001104	R-CHIP	12Mohm,5%,1/2W,AA,TP,3.4x9mm	1	SNA	
R104	2002-001104	R-CHIP	12Mohm,5%,1/2W,AA,TP,3.4x9mm	1	SNA	
R105	2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	1	SNA	
R201	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R202	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R203	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R204	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R205	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R206	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R207	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R208	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA	
R209	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R210	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R211	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R212	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R302	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R303	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R304	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R305	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R306	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R307	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	

■ MAIN PCB : DB93-03542B(MH052FWEA)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
R312	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R313	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R315	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	SNA	
R316	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	SNA	
R317	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	SNA	
R318	2007-000285	R-CHIP	100Kohm,5%,1/4W,TP,3216	1	SNA	
R319	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R320	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R350	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R401	2007-001067	R-CHIP	6.8Kohm,1%,1/8W,TP,2012	1	SNA	
R402	2007-000766	R-CHIP	330ohm,5%,1/8W,TP,2012	1	SNA	
R403	2007-001067	R-CHIP	6.8Kohm,1%,1/8W,TP,2012	1	SNA	
R404	2007-000766	R-CHIP	330ohm,5%,1/8W,TP,2012	1	SNA	
R405	2007-001067	R-CHIP	6.8Kohm,1%,1/8W,TP,2012	1	SNA	
R406	2007-000766	R-CHIP	330ohm,5%,1/8W,TP,2012	1	SNA	
R501	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R502	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R503	2007-001071	R-CHIP	6.8Kohm,5%,1/8W,TP,2012	1	SNA	
R505	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R506	2007-000872	R-CHIP	4.7Kohm,5%,1/8W,TP,2012	1	SNA	
R511	2007-000941	R-CHIP	47Kohm,5%,1/8W,TP,2012	1	SNA	
R515	2007-000941	R-CHIP	47Kohm,5%,1/8W,TP,2012	1	SNA	
R601	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R602	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R603	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R604	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R605	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R606	2007-000872	R-CHIP	4.7Kohm,5%,1/8W,TP,2012	1	SNA	
R607	2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	1	SNA	
R608	2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	1	SNA	
R609	2007-000030	R-CHIP	560ohm,5%,1/8W,TP,2012	1	SNA	
R610	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	1	SNA	
R803	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R911	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R912	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R913	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	1	SNA	
R917	2007-000300	RELAY-MINIATURE	10Kohm,5%,1/8W,TP,2012	1	SNA	
R918	2007-000300	SSR	10Kohm,5%,1/8W,TP,2012	1	SNA	
R919	2007-000766	TRANS SWITCHING	330ohm,5%,1/8W,TP,2012	1	SNA	
RY01	3501-001248	VARISTOR	12V,-,11.7mA,DPDT,4mS,4mS	1	SNA	

■ MAIN PCB : DB93-03542B(MH052FWEA)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
SS71	3502-000115	RESONATOR-CERAMIC	12Vdc,-,2A,1mS,1mS	1	SNA	
ST11	DB26-00015A	C-FILM,LEAD-PPF	-,JT1916-09,-,310V,FERRITE,-,E	1	SNA	
VA71	1405-000154	C-FILM,LEAD-PPF	560V,2500A,17.5x7.5mm,TP	1	SNA	
X501	2802-001179	DIODE-ZENER	4MHz,0.5%,BK,8x3x5.5mm	1	SNA	
XC71	2301-001439	DIODE-ZENER-23,TP	220nF,10%,275V,BK,18x10x15.8mm	1	SNA	
XC72	2301-001220	C-FILM,LEAD-PPF	100nF,10%,275V,BK,18x6x12,15	1	SNA	
ZD11	0403-000252	DIODE-ZENER	BZX84C3V6,3.4-3.8V,350mW,SOT-2	1	SNA	
ZD12	0403-001285	DIODE-ZENER	BZX84-C11,10.4-11.6V,350mW,SOT	1	SNA	
CD312	0406-001204	DIODE-TVS	SMBJ5.0CA,6.4/-/7.07V,600W,SMB	1	SNA	
CD334	0406-001204	DIODE-TVS	SMBJ5.0CA,6.4/-/7.07V,600W,SMB	1	SNA	
F701_1	3601-000263	FUSE-CARTRIDGE	250V,3.15A,TIME-LAG,GLASS,5x20	1	SNA	

■ SUB PCB : DB93-03692A(MH✳✳✳FWEA, MH✳✳VW2-✳✳)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
CN61	3711-000760	HEADER-BOARD TO CABLE	BOX,20P,2R,2mm,ANGLE,SN,BLK	1	SNA	
D900	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D901	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D902	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D903	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D904	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D905	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D906	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D907	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D908	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D909	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D910	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D911	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D912	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D913	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D914	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D915	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D916	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D917	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D918	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D919	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D920	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D921	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D922	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D923	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D924*	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D925*	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D926*	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
D927*	0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	1	SNA	
SW01	3406-001098	SWITCH-ROTARY	240V AC,25A,6P(10C),L14mm	1	SNA	
SW02	3406-001098	SWITCH-ROTARY	240V AC,25A,6P(10C),L14mm	1	SNA	
SW03*	DB34-00009A	SWITCH-DIGITAL	PT65 103,ROTARY DIP,-,DC24V Max,0.	1	SNA	
SW04	DB34-00009A	SWITCH-DIGITAL	PT65 103,ROTARY DIP,-,DC24V Max,0.	1	SNA	
SW05	3407-000121	SWITCH-DIP	24V,300mA,SLIDE,STANDARD	1	SNA	
SW06	3407-000121	SWITCH-DIP	24V,300mA,SLIDE,STANDARD	1	SNA	
SW07	3407-000121	SWITCH-DIP	24V,300mA,SLIDE,STANDARD	1	SNA	

■ MAIN PCB : DB93-02335D(MH✳✳✳FKEA)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
C901	2203-000444	C-CERAMIC,CHIP	1nF,10%,50V,X7R,TP,2012,-	1	SNA	
C204,C205,C301,C311 C401,C911~C915	2203-001562	C-CERAMIC,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	10	SNA	
C103,C107,C109,C110,C112 C201,C203,C206,C207,C208 C210,C302~C304,C312~C314 C501~C504,C805~C807,C809 C903	2203-000192	C-CERAMIC,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	26	SNA	
R201,R207,R208,R307~R310 R401,R403,R601,R603,R607 R902	2007-000468	R-CHIP	1Kohm,5%,1/10W,DA,TP,2012	13	SNA	
R206,R302~R305,R312~R315 R507,R602,R610,R611,R903 R911~R915	2007-000300	R-CHIP	10Kohm,5%,1/10W,DA,TP,2012	19	SNA	
R106,R107	2007-000572	R-CHIP	220ohm,5%,1/10W,DA,TP,2012	2	SNA	
R502,R504,R506,R511	2007-000766	R-CHIP	330ohm,5%,1/10W,DA,TP,2012	4	SNA	
R609	2007-000686	R-CHIP	3.3Kohm,5%,1/10W,DA,TP,2012	1	SNA	
R105,R604,R605	2007-000931	R-CHIP	470ohm,5%,1/10W,DA,TP,2012	3	SNA	
R101	2007-000872	R-CHIP	4.7Kohm,5%,1/10W,DA,TP,2012	1	SNA	
R512,R513	2007-000941	R-CHIP	47Kohm,5%,1/10W,DA,TP,2012	2	SNA	
R606	2007-000030	R-CHIP	560ohm,5%,1/10W,DA,TP,2012	1	SNA	
R640	2007-001071	R-CHIP	6.8Kohm,5%,1/10W,DA,TP,2012	1	SNA	
R501,R503,R505	2007-001067	R-CHIP	6.8Kohm,1%,1/10W,DA,TP,2012	3	SNA	
R202~R205	2007-000285	R-CHIP	100Kohm,5%,1/8W,DA,TP,3216	4	SNA	
R102~R104	2007-000568	R-CHIP	220Kohm,5%,1/8W,DA,TP,3216	3	SNA	
D900~D919	0401-000184	DIODE-SWITCHING	RLS4148,100V/450mA,LL-34,TP	20	SNA	
BD71	0402-001298	DIODE-BRIDGE	DF06S,600V,1A,SMD-4,TP	1	SNA	
ZD11	0403-000252	DIODE-ZENER	BZX84C3V6,3.6V,350mW,SOT-23,TP	1	SNA	
ZD12	0403-001285	DIODE-ZENER	BZX84-C11,10.4-11.6V,350MW,SOT-23,TP	1	SNA	
IC05~IC07,IC09	0506-000175	TR-ARRAY	ULN2003D013TR,NPN,7,1W,SOP-16,ST,1000	4	SNA	
Q901,Q902,Q904~Q907	0504-000001	TR-DIGITAL	DTA114EKA,PNP,200mW,10K/10K,SOT-23,TP	6	SNA	
Q201,Q401,Q601,Q602	0501-000534	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,1	4	SNA	
Q603	0501-002296	TR-SMALL SIGNAL	MMST2907A,PNP,200mW,SOT-23,TP,100-	1	SNA	
PC02	0604-001148	PHOTO-COUPLER	TLP180,TR,50-600%,200mW,SMD-4,TP	1	SNA	
IC20	0801-000393	IC-CMOS LOGIC	TC74HC86AFN(TSB),MM74HC86M(FCS)HD74HC86(FP-1 4DN)(HIT)	1	SNA	
IC51	1103-001175	IC-EEPROM	93LC56,128x16Bit,SOP,8P,150MIL,-,2.5V,-	1	SNA	
D101	0402-001194	DIODE-RECTIFIER	UG2D,200V,2A,DO-204AC,TP	1	SNA	
CD11~CD13	0406-001086	DIODE-TVS	ST02D-200,185/200/215V,200W,DO-214	3	SNA	
CD31~CD34	0406-001109	DIODE-TVS	SAC5.0,7.6/-/-V,500W,DO-15	4	SNA	
C601	2401-001573	C-AL	47uF,20%,50V,GP,TP,6.3x11,2.5	1	SNA	
C105,C106,C108	2401-000038	C-AL	470uF,20%,25V,GP,TP,10x12.5mm	3	SNA	

■ MAIN PCB : DB93-02335D(MH✳✳✳FKEA)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
C111	2401-001363	C-AL	470uF,20%,16V,GP,TP,10x12.5,5	1	SNA	
L101	2702-001118	INDUCTOR-RADIAL	5mH,10%,8x11mm	1	SNA	
L102	-	INDUCTOR-RADIAL	4.7uH,10%,6.5x7.5mm	1	SNA	
X301	2802-000103	RESONATOR-CERAMIC	10MHz,0.5%,TP,10.0x5.0x8.0mm	1	SNA	
F702	3601-001209	FUSE-RADIAL LEAD	250V,1A,TIME-LAG,-,8.5x8mm,LT-5-010-H	1	SNA	
IC03	1202-000001	IC-VOLTAGE COMP.	KA7533,TO-92,3P,-,SINGLE,-,-,PLASTIC	1	SNA	
BZ61	3002-001041	BUZZER-PIEZO	70dB,3V,-,2KHz,BK	1	SNA	
C104	2201-000987	C-CERAMIC,DISC	2.2nF,20%,400V,Y5U,TP,12.5x6mm,10	1	SNA	
CR71	2301-001094	C-FILM,MPPF	1.5uF,10%,450V,BK,38x18x30,33m	1	SNA	
XC71	2301-001220	C-FILM,MPPF	100nF,10%,275V,BK,18x6x12,15	1	SNA	
C101,C102	2401-003518	C-AL	6.8uF,20%,450V,GP,TP,10x16mm,5	2	SNA	
FT71	-	FILTER-EMI AC LINE	HP1-P10,250V,1A,-,220000PF,20.5x20.5x32	1	SNA	
F701	-	FUSE	250V, 3.15A, TIME-LAG,GLASS,5x20mm,521-3150-401	1	SNA	
F701	3602-001012	FUSE-BLOCK	FB-58,500V,-,100M	1	SNA	
IC18,IC19	1006-001210	IC-BUS TRANSCEIVER	MAX485,DIP,8P,300MIL,SINGLE,ST,PLASTIC	2	SNA	
IC04	DB09-00220D	IC MICOM	MB89538AP-101,64P,+5V,10MHz,STM-0025BC	1	SNA	
IC02	1203-000274	IC-POSI.FIXED REG.	KA7805,TO-220,3P,-,PLASTIC,4.8/5	1	SNA	
IC01	1203-001813	IC-PWM CONTROLLER	TNY255P,DIP,8P,300MIL,PLASTIC,-0.3/7	1	SNA	
PC01	0604-000117	PHOTO-COUPLER	PC817B,TR,130-260%,200mW,DIP-4,ST	1	SNA	
RY71,RY72	3501-001154	RELAY-MINIATURE	FTR-F3AA012E,12VDC,5A,200mW,3000mA,1FORmA,10mS	2	SNA	
RY01	3501-001248	RELAY-MINIATURE	G6S-2,12V,2A,-,11.7mA,DPDT,4mS,4mS	1	SNA	
SW01	3406-001092	SWITCH-ROTARY	PT65-112,240V AC,25A,6P,L14mm	1	SNA	
SW02	-	SWITCH-DIGITAL	PT65 701,ROTARY DIP,-,DC24V MAX,0.4	1	SNA	
SW03	DB34-00009A	SWITCH-DIGITAL	PT65 103,ROTARY DIP,-,DC24V MAX,0.4	1	SNA	
SW04,SW05	3407-001062	SWITCH-DIP	DIP-SW,BSD-104,5V DC,100mA,SLIDE,-	2	SNA	
SW06	3407-000119	SWITCH-DIP	DIP-SW,BSD-102,24V,300mA,SLIDE,-	1	SNA	
SS71	3502-000115	SSR	G3MB202PL/AQG22212,12Vdc,-,2A,1mS,1mS	1	SNA	
ST11	DB26-00004A	TRANS SWITCHING	JT1916-1701PS,DC12V,12V,0.01A,-,EE1916	1	SNA	
VA73	1405-000001	VARISTOR	INR14D471,470V,1250A,14x7.5mm,TP	1	SNA	
VA71	1405-000154	VARISTOR	INR14D561K-RS,560V,2500A,17.5x7.5mm,TP	1	SNA	
CN42	3711-003942	CONNECTOR-HEADER	SMW200-02,WHT,BOX,2P,1R,2mm,STRAIGHT,SN	1	SNA	
CN61	3711-004236	CONNECTOR-HEADER	SMW200-06,NTR,BOX,6P,1R,2mm,STRAIGHT,SN	1	SNA	
CN41	3711-004379	CONNECTOR-HEADER	SMW200-04,NTR,BOX,4P,1R,2mm,STRAIGHT,SN	1	SNA	
CN91	3711-004712	CONNECTOR-HEADER	SMW200-09,WHT,BOX,9P,1R,2mm,STRAIGHT,SN	1	SNA	
CN51	3711-000794	CONNECTOR-HEADER	SMW250-02,BLK,BOX,2P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN44	3711-000879	CONNECTOR-HEADER	SMW250-03,BLU,BOX,3P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN43	3711-000178	CONNECTOR-HEADER	YW396-02V,WHT,1WALL,2P,1R,3.96mm,STRAIGHT,SN	1	SNA	
CN32	3711-000176	CONNECTOR-HEADER	YW396-02V,BLU,1WALL,2P,1R,3.96mm,STRAIGHT,SN	1	SNA	
CN31	3711-000177	CONNECTOR-HEADER	YW396-02V,RED,1WALL,2P,1R,3.96mm,STRAIGHT,SN	1	SNA	

■ MAIN PCB : DB93-02335D(MH✳✳✳FKEA)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
CN75	3711-000203	CONNECTOR-HEADER	YW396-03AV,WHT,1WALL,2P,1R,7.92mm,STRAIGHT,SN	1	SNA	
CN71	3711-003404	CONNECTOR-HEADER	YW396-03AV,BLU,1WALL,2P,1R,7.92mm,STRAIGHT,SN	1	SNA	
CN73	3711-003405	CONNECTOR-HEADER	YW396-03AV,BLK,1WALL,2P,1R,7.92mm,STRAIGHT,SN	1	SNA	
CN72	3711-000262	CONNECTOR-HEADER	YW396-05AV,WHT,1WALL,3P,1R,7.92mm,STRAIGHT,SN	1	SNA	
CN62	3711-001001	CONNECTOR-HEADER	B5B-XH-A,BLU,BOX,5P,1R,2.5mm,STRAIGHT,SN	1	SNA	
PCB BOARD	-	PCB	FR-4, W135xH216,1x2 REV NO-30210A5	1	SNA	

■ MAIN PCB : DB93-01764D(MH✳✳✳FDEA)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
D900~D919	0401-000133	DIODE-SWITCHING	RLS4148,Small surface mounting type	20	SNA	
R402,R404,R406,R408,R410,R701	2007-000766	R-CHIP	5%,2012,1/8W,330R	6	SNA	
R604,R605	2007-000931	R-CHIP	5%,2012,1/8W,470R	2	SNA	
R201,R204~R206,R601, R603,R607,R703,R711~R714	2007-000468	R-CHIP	5%,2012,1/8W,1KR	12	SNA	
R202,R610	2007-000686	R-CHIP	5%,2012,1/8W,3.3KR	2	SNA	
R403,R405,R407,R409	2007-001067	R-CHIP	1%,2012,1/8W,6.8KR	4	SNA	
R203,R302~R307,R312,R313, R401,R602,R608,R609,R702, R801,R911~R915	2007-000300	R-CHIP	5%,2012,1/8W,10KR	20	SNA	
R511,R512	2007-000941	R-CHIP	5%,2012,1/8W,47KR	2	SNA	
C702	2203-000444	C-CER,CHIP	CL21B102KBNC,1nF	1	SNA	
C204,C205,C301,C311, C911~C915	2203-001562	C-CER,CHIP	CL21B103KBNC,10nF	9	SNA	
C102,C104,C201~C203, C302~C307,C312~C316, C401~C405,C504,C701, C801~C804,C806~C809	2203-000192	C-CER,CHIP	CL21F104ZANC,100nF	31	SNA	
Q603	0501-002296	TR-SMALL SIGNAL	MMST2907A,60V,0.6A,200mW,NPN,SC59	1	SNA	
IC20	0801-000393	IC-CMOS LOGIC	TC74HC86AFN(TSB),MM74HC86M(FCS), HD74HC86(FP-1 4DN)(HIT)	1	SNA	
Q201,Q202,Q601,Q602	0501-000534	TR-SMALL SIGNAL	2SC2412K (NPN, 50V, 0.15A)	4	SNA	
Q901,Q902,Q904~Q907	0504-000001	TR-DIGITAL	DTA114EKA(PNP-DIGITAL TRANSISTOR)	6	SNA	
IC06~IC09	0506-000175	TR-ARRAY	ULN2003ADR	4	SNA	
IC51	1103-001175	IC-EEPROM	93LC56B,8-SOIP,128*16BIT	1	SNA	
BD71	0402-001298	DIODE-BRIDGE	DF06S (600V, 1A)	1	SNA	
PCB BOARD	DB41-00254A	PBA LOGIC BOARD	FR-4, W168xH219, 1.6T (BOARD CODE=30228A4)	1	SNA	
C105	2401-000038	C-AL	RADIAL,SD,470UF,20%,25V,10*12.5	1	SNA	
C103	2401-000711	C-AL	RADIAL,SG 25V/2200uF 16x25, 85˚	1	SNA	
C101	2401-002216	C-AL	RADIAL,SD 35V/2200uF 16x25, 85˚	1	SNA	
D105	0402-000137	DIODE-RECTIFIER	AXIAL,1N4007	1	SNA	
CD31~CD34	0406-001109	DIODE-TVS	SAC5.0,AXIAL,DO-204AC(DO-15)	4	SNA	
X301	2802-001198	RESONATOR CERAMIC	10MHz(CSTLS10M0G53-A0)	1	SNA	
VA71	1405-000154	VARISTOR	560V,0.6W,50A,14mm,INR14D561K	1	SNA	
IC01	1203-000243	IC-POSI,FIXED REG	KA7812,1A,TO-220,3P	1	SNA	
IC03	1202-000001	IC-VOLTAGE COMP	KA75330Z,TO-92,Voltage detector	1	SNA	
IC02	1203-000274	IC-POSI,FIXED REG	KA7805,TO-220,SEC	1	SNA	
SW04,SW05	3407-000121	SWITCH DIP	IWD-04,8PIN	2	SNA	
SW06	3407-000119	SWITCH DIP	BSD-102,24V,300mA,SLIDE,-	1	SNA	
SW03	DB34-00009A	SWITCH DIGITAL	PT65 103,ROTARY DIP	1	SNA	
SW01	3406-001092	SWITCH ROTARY	PT65 112,ROTARY DIP,240V AC,25A,6P,L14mm	1	SNA	

■ MAIN PCB : DB93-01764D(MH✳✳✳FDEA)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
SW02	3406-001098	SWITCH ROTARY	PT65 501,ROTARY DIP,-,DC24V MAX,0.4	1	SNA	
CN91	3711-003845	HEADER-BOARD TO CABLE	SMW200-11,WHT	1	SNA	
CN51	3711-000794	HEADER-BOARD TO CABLE	SMW250-02P, BLK	1	SNA	
CN42	3711-000015	HEADER-BOARD TO CABLE	SMW250-02P, WHT	1	SNA	
CN52	3711-000798	HEADER-BOARD TO CABLE	SMW250-02P, YEL	1	SNA	
CN11	3711-000880	HEADER-BOARD TO CABLE	SMW250-03P, RED	1	SNA	
CN62	3711-001001	CONNECTOR HEADER	SMW250-05P, BLU	1	SNA	
CN32	3711-000176	HEADER-BOARD TO CABLE	YW396-02V, BLU	1	SNA	
CN31	3711-000177	HEADER-BOARD TO CABLE	YW396-02V, RED	1	SNA	
CN43	3711-000178	HEADER-BOARD TO CABLE	YW396-02V,WHT	1	SNA	
CN75	3711-003405	HEADER-BOARD TO CABLE	YW396-03AV,BLK	1	SNA	
CN71	3711-003404	HEADER-BOARD TO CABLE	YW396-03AV,BLU	1	SNA	
CN76	3711-003407	HEADER-BOARD TO CABLE	YW396-03AV,RED	1	SNA	
CN72	3711-000203	HEADER-BOARD TO CABLE	YW396-03AV,WHT	1	SNA	
CN74	3711-003406	HEADER-BOARD TO CABLE	YW396-03AV,YEL	1	SNA	
CN77	3711-000315	HEADER-BOARD TO CABLE	YW396-07AV,WHT	1	SNA	
CN73	3711-000357	HEADER-BOARD TO CABLE	YW396-09AV,WHT	1	SNA	
F702	3601-001308	FUSE	250V,1.6A,TIME-LAG,PLASTIC,8.4x7.6mm,SR-5-016-H	1	SNA	
F701	3602-001012	FUSE-BLOCK	FB-58A,250V	1	SNA	
F701	3601-000263	FUSE CARTRIDGE	250V,T3.15A,TIME-LAG,GLASS	1	SNA	
FT71	2901-001181	FILTER-EMI AC LINE	HP1-P10(250V,1A)	1	SNA	
IC18,IC19	1006-001210	IC-BUS TRANS RECEIVER	MAX485 (DIP)	2	SNA	
RY74~RY78	3501-000399	RELAY-MINIATURE	JQ1A-12V	5	SNA	
RY83,RY85,RY87,RY89	3501-001163	RELAY-MINIATURE	CS11-12SH,250V,5A	4	SNA	
RY01	3501-001248	RELAY-MINIATURE	G6S-2,12V,-,11.7mA,DPDT,4mS,4mS	1	SNA	
IC04	DB09-00220D	IC-MICOM	MB89538AP-101,64P,+5V,10MHz,STM-0025BC	1	SNA	

■ MAIN PCB : DB93-03213D(MH✳✳✳FEEA)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
C204,C205,C441,C911~C914	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	7	SNA	
C301,C311	2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	2	SNA	
C302,C303,C312,C313	2203-000189	C-CER,CHIP	100nF,+80-20%,25V,Y5V,TP,1608	4	SNA	
C901	2203-000444	C-CER,CHIP	1nF,10%,50V,X7R,TP,2012,-	1	SNA	
C10,C12,C102,C104, C201~C203,C304~C307, C314~C316,C401~C403, C413,C504~C506,C801, C802,C806~C808,C815~C819, C902	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	32	SNA	
Q201,Q202,Q441,Q601,Q602	0501-000534	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,1	5	SNA	
Q603	0501-002296	TR-SMALL SIGNAL	MMST2907A,PNP,200mW,SMT3,TP,100-3	1	SNA	
Q901,Q902,Q904~Q910	0504-000001	TR-DIGITAL	DTA114EKA,PNP,200mW,10K/10K,SOT-23,TP	9	SNA	
R10,R11,R12	2007-000023	R-CHIP	120ohm,5%,1/8W,TP,2012	3	SNA	
R201,R205,R206,R207,R350, R441,R443,R601,R603,R607,R902	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	11	SNA	
R204,R302,R304~R307,R312,R313, R503,R512,R602,R608,R609,R803, R804,R903,R911~914	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	20	SNA	
R401,R402,R403	2007-001067	R-CHIP	6.8Kohm,1%,1/8W,TP,2012	3	SNA	
R440	2007-001071	R-CHIP	6.8Kohm,5%,1/8W,TP,2012	1	SNA	
R404,R405,R406,R416,R502, R509,R901	2007-000766	R-CHIP	330ohm,5%,1/8W,TP,2012	7	SNA	
R202,R610	2007-000686	R-CHIP	3.3Kohm,5%,1/8W,TP,2012	2	SNA	
R413	2007-000613	R-CHIP	24Kohm,1%,1/8W,TP,2012	1	SNA	
R511,R513	2007-000938	R-CHIP	47Kohm,1%,1/8W,TP,2012	2	SNA	
R604,R605	2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	2	SNA	
R611,R612,R613	2007-000872	R-CHIP	4.7Kohm,5%,1/8W,TP,2012	3	SNA	
R805	2007-000477	R-CHIP	1Mohm,5%,1/8W,TP,2012	1	SNA	
CN32	3711-000178	CONNECTOR-HEADER	VH-2A,WHT	1	SNA	
CN72	3711-000203	CONNECTOR-HEADER	VH-3A,WHT	1	SNA	
CN78	3711-000262	CONNECTOR-HEADER	VH-5A,WHT	1	SNA	
BD71	0402-001298	DIODE-BRIDGE	DF06S,600V,1A,SMD-4,TP	1	SNA	
C101	2401-002216	C-AL	2200uF,20%,35V,GP,TP,16x25,7.5	1	SNA	
C103	2401-000711	C-AL	2200uF,20%,25V,GP,TP,16x25,7.5	1	SNA	
C105	2401-000037	C-AL	470uF,20%,16V,GP,TP,8x11.5,5	1	SNA	
D105	0402-000137	DIODE-RECTIFIER	1N4007,1KV,1A,DO-41,TP	1	SNA	
D904~D907,D912~D927	0401-000133	DIODE-SWITCHING	LL4148,100V,200mA,SOD-80C,TP	20	SNA	
LED11	0601-001373	LED	ROUND,RED,3mm,630nm	1	SNA	
LED12	0601-001375	LED	ROUND,GRN,3mm,570nm	1	SNA	
LED13	0601-001377	LED	ROUND,YEL,3mm,585nm	1	SNA	

■ MAIN PCB : DB93-03213D(MH✳✳✳FEEA)(cont)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
F701	3602-000147	FUSE-CLIP	250V,7.5A,30mohm	2	SNA	
F701_1	3601-000263	FUSE-CARTRIDGE	250V,3.15A,TIME-LAG,GLASS,5x20mm	1	SNA	
F702	3601-001308	FUSE	250V,1.6A,TIME-LAG,PLASTIC,8.4x7.6mm	1	SNA	
FT71	DB27-00019A	COIL CHOKE	250V,2.5A,20mH	1	SNA	
A6063,25,15,15	DB62-03085A	HEAT SINK	-	4	SNA	
IC05~09	0506-000175	TR-ARRAY	ULN2003AD/ULN2003AFW	5	SNA	
IC51	1103-001175	IC-EEPROM	93LC56	1	SNA	
RY70,RY71	3501-001154	RELAY-POWER	PCJ-112D3M,12VDC,3A	2	SNA	
SW05,SW06,SW07	-	SWITCH-DIP	DS-04;24V,300mA,SLIDE,STANDARD	3	SNA	
VA71,VA75	1405-000154	VARISTOR	TVR14561,560V,4500A	2	SNA	
X301	2802-001179	RESONATOR-CERAMIC	4MHz,0.5%,BK,8x3x5.5mm	1	SNA	
X701,X702	2301-001220	C-FILM	100nF,10%,275V,BK,18x6x12,15	2	SNA	
-	DB41-00364A	PCB	CEM-3 T1.6	1	SNA	
-	DB68-02809A	LABEL BAR CODE	W170£¨L115	1	SNA	
CN10	3711-004182	CONNECTOR-HEADER	SMW200-10,WHT	1	SNA	
CN11	3711-000880	CONNECTOR-HEADER	SMW250-03,RED	1	SNA	
CN31	3711-000177	CONNECTOR-HEADER	YW396-02AV,RED	1	SNA	
CN33	3711-000176	CONNECTOR-HEADER	YW396-02AV,BLU	1	SNA	
CN41	3711-000940	CONNECTOR-HEADER	SMW250-04,WHT	1	SNA	
CN42	3711-000015	CONNECTOR-HEADER	SMW250-02,WHT	1	SNA	
CN51	3711-000794	CONNECTOR-HEADER	SMW250-02,BLK	1	SNA	
CN71	3711-003404	CONNECTOR-HEADER	YW396-03AV,BLU	1	SNA	
CN72	3711-000203	CONNECTOR-HEADER	YW396-03AV,WHT	1	SNA	
CN74	3711-003406	CONNECTOR-HEADER	YW396-03AV,YEL	1	SNA	
CN75	3711-003405	CONNECTOR-HEADER	YW396-03AV,BLK	1	SNA	
CN81	3711-000939	CONNECTOR-HEADER	SMW250-04,RED	1	SNA	
CN83	3711-000796	CONNECTOR-HEADER	SMW250-02,RED	1	SNA	
CN91	3711-003845	CONNECTOR-HEADER	SMW200-11,WHT	1	SNA	
CN62	3711-001001	CONNECTOR-HEADER	B5B-XH-A,BLU	1	SNA	
IC01	1203-000243	IC-POSI.FIXED REG	7812,TO-220,3P,-,PLASTIC,11.5	1	SNA	
IC02	1203-000274	IC-POSI.FIXED REG.	7805,TO-220,3P,-,PLASTIC,4.8/5	1	SNA	
CD312,CD334	0406-001204	DIODE-TVS	SMBJ5.0CA,6.4/-/7.07V,600W,SMB	2	SNA	
IC03	1203-003334	IC-RESET	S-80142ANMC-JC3-T2	1	SNA	
IC04	DB09-00372A	MICOM	MB90F823,80P,QFP,FTP-80P-M06	1	SNA	
IC18,IC19	1006-001312	IC-BUS TRANSCEIVER	LMS1487EIM	2	SNA	
IC20	0801-000393	IC-CMOS LOGIC	MM74HC86M	1	SNA	
RY01	3501-001248	RELAY-MINIATURE	G6S-2,12V,-,11.7mA,DPDT,4mS,4mS	1	SNA	
SS71	3502-001026	SSR	G3CN-203PL1,DC 12V,12V,3A,1mS,-	1	SNA	
SW02	3406-001098	SWITCH-ROTARY	PT65-701,240V AC,25A,6P(10C),L14mm	1	SNA	
SW04	DB34-00009A	SWITCH-DIGITAL	PT65 103,ROTARY DIP,-,DC24V MAX,0.	1	SNA	

■ OUTDOOR PCB : DB93-03143A(MH040FXEA2/MH052FXEA2/MH14VP2X/MH16VP2X/MH18VP2X/MH19VP2X/MH14VW2X/MH16VW2X/MH18VW2X/MH19VW2X)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
*CN50	3711-000795	CONNECTOR-HEADER	BOX,2P,1R,2.5mm,STRAIGHT,SN,BLU	1	SNA	
*CN60	3711-003843	CONNECTOR-HEADER	BOX,8P,1R,2mm,STRAIGHT,SN	1	SNA	
*CN71	3711-004236	CONNECTOR-HEADER	BOX,6P,1R,2mm,STRAIGHT,SN	1	SNA	
*CN72,CN61	3711-004379	CONNECTOR-HEADER	BOX,4P,1R,2mm,STRAIGHT,SN	2	SNA	
*CN73	3711-003942	CONNECTOR-HEADER	BOX,2P,1R,2mm,STRAIGHT,SN	1	SN	
*R411,R416	2007-000254	R-CHIP	1.62Kohm,1%,1/8W,TP,2012	2	SNA	
*RY03~RY07	3501-001238	RELAY-POWER	DC12V,3A 250V AC,-,-,10mS,10mS	5	SNA	
C003,C007	2301-001285	C-FILM,LEAD-PPF	680nF,10%,275V,BK,31x11x21mm,27.5	2	SNA	
C004,C005,C009,C010	2201-000154	DISC	RADIAL,SCE,10nF,2KV,14FF7	4	SNA	
C006	2301-001325	C-FILM,LEAD-PPF	330nF,10%,275V,TP,26x8.5x18mm,22	1	SNA	
C008	2301-000141	C-FILM,LEAD-PEF	10nF,10%,630V,TP,16x11x7.5mm,5	1	SNA	
C101~C103	DB98-21655A	C-AL	470uF,20%,400V,WT,BK,35x45mm,10	3	SNA	
C104	2401-000470	C-AL	10uF,20%,450V,GP,TP,13x20mm,5m	1	SNA	
C105,C106	2201-000322	C-CERAMIC,DISC	2.2nF,10%,2KV,Y5P,TP,13x5mm,10	2	SNA	
C107,C428,C705	2401-001552	C-AL	47uF,20%,35V,GP,TP,6.3x11,2.5	3	SNA	
C108	2203-001414	C-CER,CHIP	330nF,10%,50V,X7R,TP,2012	1	SNA	
C109,C112,C116,C117,C121 ,C302~C306,C404~C410,C417 C418,C429,C430,C501~C506 C508~C511,C513,C707,C714	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	34	SNA	
C110,C114,C119,C806,C807	2401-000832	C-AL	220uF,20%,25V,GP,TP,8x11.5,5	5	SNA	
C113,C122,C803	2203-005261	C-CER,CHIP	1000nF,10%,25V,X7R,-,3216	3	SNA	
C118,C401~C403	2401-002300	C-AL	47uF,20%,50V,GP,TP,6.3x11,5	4	SNA	
C123	2401-000303	C-AL	100uF,20%,25V,GP,TP,6.3x11,5	1	SNA	
C201,C203~C205,C301,C427 C601~C603,C701~C703,C710 C711,C802,C901~C903	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	18	SNA	
C202,C512,C708,C712,C713	2203-000189	C-CER,CHIP	100nF,+80-20%,25V,Y5V,TP,1608	5	SNA	
C411~C416,C704	2203-000126	C-CER,CHIP	1.2nF,10%,50V,X7R,TP,2012	7	SNA	
C419,C420	2203-000609	C-CER,CHIP	22nF,10%,50V,X7R,TP,2012	2	SNA	
C421	2401-002274	C-AL	220uF,20%,35V,GP,TP,10x16,5	1	SNA	
C422,C804,C805	2306-000123	C-FILM,LEAD-PPF	100nF,5%,630V,BK,26x16.5x8.5,2	3	SNA	
C423,C425	2203-000495	C-CER,CHIP	2.2nF,10%,50V,X7R,TP,2012	2	SNA	
C424	2203-000891	C-CER,CHIP	4.7nF,10%,50V,X7R,TP,2012	1	SNA	
C426	2203-000818	C-CER,CHIP	0.033nF,5%,50V,C0G,TP,2012	1	SN	
C706,C507	2203-000979	C-CER,CHIP	47nF,10%,50V,X7R,TP,2012	1	SNA	
C709	2401-003036	C-AL	100uF,20%,16V,GP,TP,5X11mm,5mm	1	SNA	
CD31,CD32	0406-001109	DIODE-TVS	SAC5.0,7.6/-/-V,500W,DO-15	2	SNA	
CN51	3711-000939	CONNECTOR-HEADER	BOX,4P,1R,2.5mm,STRAIGHT,SN	1	SNA	

■ OUTDOOR PCB : DB93-03143A(MH040FXEA2/MH052FXEA2/MH14VP2X/MH16VP2X/MH18VP2X/MH19VP2X/MH14VW2X/MH16VW2X/MH18VW2X/MH19VW2X)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
CN52	3711-000940	CONNECTOR-HEADER	BOX,4P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN53	3711-000998	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN,RED	1	SNA	
CN54	3711-001000	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN55	3711-000997	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN56	3711-000996	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN57	3711-004182	CONNECTOR-HEADER	BOX,10P,1R,2mm,STRAIGHT,SN,NTR	1	SNA	
CN58	3711-000176	CONNECTOR-HEADER	1WALL,2P,1R,3.96mm,STRAIGHT,SN	1	SNA	
CN59	3711-004349	CONNECTOR-HEADER	BOX,3P,1R,2mm,STRAIGHT,SN	1	SNA	
CN62	3711-000262	CONNECTOR-HEADER	1WALL,3P,1R,7.92mm,STRAIGHT,SN,W	1	SNA	
D102,D401~D403	0402-000351	DIODE-RECTIFIER	1N4937,600V,1A,DO-41,TP	4	SNA	
D103	0402-001427	DIODE-RECTIFIER	ES1D,200V,1A,DO-214AC,TP	1	SNA	
D201,D451	0407-000123	DIODE-ARRAY	DAN202K,80V,100mA,CA2-3,SOT-23,TP	2	SNA	
DSA	DB47-00016A	POSISTOR	DSA-332MA,2pF MAX,100MOhm,ASM-3500	1	SA	
FT00	DB27-00023A	COIL CHOKE-LS320038	LS320038,,3.8mH,10%,	1	SNA	
FT01	DB27-00024A	COIL CHOKE-LS321026	LS321026,,2.6mH,10%	1	SNA	
FUSE	3601-001198	FUSE-CARTRIDGE	250V,20A	1	SNA	
IC01	DB09-00238A	IC MICOM	ML66517,-,80 P,5 V,25 MHz,OTP,-,24,16,QF	1	SNA	
IC11	1203-003527	IC-PWM CONTROLLER	TOP243,DIP,7P,9.83x6.6mm,PLASTIC	1	SNA	
IC12,IC61,IC62	0604-001172	PHOTO-COUPLER	TR,100-300,200mW,SOP,TP	3	SNA	
IC13	1203-002948	IC-POSI.ADJUST REG.	TL431ACD,SOP,8P,4.9x3.9mm,PLASTIC	1	SNA	
IC16,IC19	DB95-00594A	ASS'Y-VOLTAGE REGULATOR	KIA78M05,KA78M05	2	SNA	
IC20	1006-001210	IC-BUS TRANSCEIVER	485,DIP,8P,300MIL,SINGLE,ST,PL	1	SNA	
IC21,IC42	1202-000104	IC-VOLTAGE COMP.	393,SOP,8P,150MIL,DUAL,36V,CMO	2	SNA	
IC30	0801-000393	IC-CMOS LOGIC	74HC86,OR GATE,SOP,14,150MIL,QUAD,S	1	SNA	
IC31	0604-001003	PHOTO-COUPLER	TR,50-150%,200mW,DIP-4,ST	1	SNA	
IC41	1201-000166	IC-OP AMP	LM358,SOP,ST,8P,150MIL,DUAL,100V/MV,PLASTIC	1	SNA	
IC71	1103-001175	IC-EEPROM	93LC56,128x16,SOP,8P,5x4mm,2.5/6.0V,-40	1	SNA	
IC72	0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	1	SNA	
IC73,IC59	1203-003334	IC-RESET	S-801,SOT-23,5P,2.9x1.6mm,PLASTIC,3.716	2	SNA	
IC81	DB95-00595A	ASS'Y-PHOTO COUPLER	-	1	SNA	
LED1	0601-001373	LED	ROUND,RED,3mm,630nm	1	SNA	
LED2	0601-001375	LED	ROUND,GRN,3mm,570nm	1	SNA	
LED3	0601-000402	LED	ROUND,YEL,3X4.0mm,585nm,-	1	SNA	
PT02	DB26-00049A	TRANS PULSE	PT_50,,10,65.5,8~14,EI2218	1	SNA	
Q801	0504-000127	TR-DIGITAL	KSR1102,NPN,200mW,10K/10K,SOT-23,TP	1	SNA	
Q901~Q904	0504-000001	TR-DIGITAL	DTA114EKA,PNP,200mW,10K/10K,SOT-23,TP	4	SNA	
R001	2006-001080	R-CEMENT(S)	200ohm,5%,5W,CB,BK,13x9x25.5mm	1	SNA	
R101	2003-000855	R-METAL OXIDE(S)	47Kohm,5%,3W,AA,TP,6x16mm	1	SNA	
R102	2007-001074	R-CHIP	6.8ohm,5%,1/8W,TP,2012	1	SNA	

■ OUTDOOR PCB : DB93-03143A(MH040FXEA2/MH052FXEA2/MH14VP2X/MH16VP2X/MH18VP2X/MH19VP2X/MH14VW2X/MH16VW2X/MH18VW2X/MH19VW2X)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
R103,R512,R601,R604	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	4	SNA	
R104	2007-000686	R-CHIP	3.3Kohm,5%,1/8W,TP,2012	1	SNA	
R105	2007-001222	R-CHIP	9.09Kohm,1%,1/8W,TP,2012	1	SNA	
R106,R203,R204	2007-000263	R-CHIP	1.82Kohm,1%,1/8W,TP,2012	3	SNA	
R107	2003-000708	R-OXIDE	47ohm,5%,1W,MOR1W47ohmJTB	1	SNA	
R112~R114	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	3	SNA	
R115	2007-000385	R-CHIP	14.3Kohm,1%,1/4W,TP,3216	1	SNA	
R202,R207	2007-002667	R-CHIP	90.9Kohm,1%,1/4W,TP,3216	2	SNA	
R205,R208	2007-000671	R-CHIP	2Kohm,5%,1/8W,TP,2012	2	SNA	
R301	2007-000023	R-CHIP	120ohm,5%,1/8W,TP,2012	1	SNA	
R302,R304,R305,R315 R513~R516,R706 R708~R712,R716,R717 R720,R725,R726,R805	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	20	SNA	
R307~R314	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	8	SNA	
R401~R406,R425,R426	2007-000290	R-CHIP	100ohm,5%,1/8W,TP,2012	8	SNA	
R407	2007-000872	R-CHIP	4.7Kohm,5%,1/8W,TP,2012	1	SNA	
R408~R410	2007-000781	R-CHIP	33ohm,5%,1/8W,TP,2012	3	SNA	
R427,R718,R719	2007-000465	R-CHIP	1Kohm,1%,1/8W,TP,2012	3	SNA	
R413~R415,R429~R431	2007-008261	R-CHIP	150Kohm,1%,1/2W,TP,5025	6	SNA	
R417	2007-008562	R-CHIP	30.1ohm,1%,1/8W,TP,2012	1	SNA	
R418,R419,R432	2007-009114	R-CHIP	110Kohm,1%,1/2W,TP,5025	3	SNA	
R420	2007-000515	R-CHIP	2.7Kohm,1%,1/8W,TP,2012	1	SNA	
R421	2006-001131	R-CEMENT	17mohm,5%,15W,WR15P	1	SNA	
R422	2007-000938	R-CHIP	47Kohm,1%,1/8W,TP,2012	1	SNA	
R423,R509,R707	2007-000546	R-CHIP	20Kohm,5%,1/8W,TP,2012	3	SNA	
R424	2007-000868	R-CHIP	4.7Kohm,1%,1/8W,TP,2012	1	SNA	
R501,R504	2007-002903	R-CHIP	18.2K-F,1/12W,1608	2	SNA	
R502,R503,R724	2007-000613	R-CHIP	24Kohm,1%,1/8W,TP,2012	3	SNA	
R505~R508,R723	2007-000763	R-CHIP	330ohm,1%,1/10W,TP,1608	5	SNA	
R510,R704	2007-000477	R-CHIP	1Mohm,5%,1/8W,TP,2012	2	SNA	
R511,R911~R913	2007-000964	R-CHIP	5.1Kohm,5%,1/8W,TP,2012	4	SNA	
R602,R603	2007-000766	R-CHIP	330ohm,5%,1/8W,TP,2012	2	SNA	
R701~R703	2007-000282	R-CHIP	100Kohm,5%,1/8W,TP,2012	3	SNA	
R705	2007-000976	R-CHIP	5.62Kohm,1%,TP,2012	1	SNA	
R713~R715	2007-000511	R-CHIP	MCR10EZH,J242,2.4Kohm,1/8W,5%,2012	3	SNA	
R721,R722	2007-000297	R-CHIP	10Kohm,1%,1/8W,TP,2012	2	SNA	
R722	2007-000297	R-CHIP	10Kohm,1%,1/8W,TP,2012	1	SNA	
R806,R807	2007-000553	R-CHIP	20ohm,5%,1/4W,TP,3216	2	SNA	

■ OUTDOOR PCB : DB93-03143A(MH040FXEA2/MH052FXEA2/MH14VP2X/MH16VP2X/MH18VP2X/MH19VP2X/MH14VW2X/MH16VW2X/MH18VW2X/MH19VW2X)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
R808,R412	2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	2	SNA	
R901~R907	2007-001318	R-CHIP	1Kohm,5%,1/4W,DA,TP,3216	7	SNA	
R908~R910	2007-001175	R-CHIP	8.2Kohm,1%,1/10W,TP,1608	3	SNA	
RY01	3501-001169	RELAY-POWER	12VDC,0.9W,20000mA,SPST,20mS,10mS	1	SA	
RY31	3501-001248	RELAY-MINIATURE	12V,-,11.7mA,DPDT,4mS,4mS	1	SNA	
VA01~VA05	1405-000154	VARISTOR	560V,2500A,17.5x7.5mm,TP	5	SNA	
XTAL01	2802-001221	RESONATOR-CERAMIC	6.25MHz,+/-0.5%,TP,8.5x6.5x4.0	1	SNA	
XTAL51	2802-001179	RESONATOR-CERAMIC	4MHz,0.5%,BK,8X3X5.5mm	1	SNA	
ZD21,ZD22,ZD72	0403-000282	DIODE-ZENER	MMBZ5232B,5%,225mW,SOT-23,TP	3	SNA	
IC50	DB09-00327B	IC MICOM	MB90F822,80P,5V,24MHz,SMT-0458-OA	1	SNA	
FUSE CHIP	3602-001038	-	-	1	SNA	
BD01	0402-001553	DIODE-BRIDGE	GBPC3506W,600V,35A,SQUARE-4,BK	1	SNA	
D101	DB98-16587A	ASS'Y-DIODE-SHOTTKY	R3060G2	1	SNA	
D104~D106	0402-001427	DIODE-RECTIFIER	ES1D,200V,1A,DO-214AC,TP	3	SNA	
IC51~IC55	0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	5	SNA	
IPM	DB95-00631A	ASS'Y-IPM	PS21867-P, 30A/600V	1	SNA	
Q803	DB98-16589A	ASS'Y-IGBT	SGL160N60UF	1	SNA	
R002,R003	2007-007459	R-CHIP	470Kohm,5%,1/2W,DA,TP,5025	2	SNA	
R116~R118	2007-009113	R-CHIP	680Kohm,5%,1W,TP,6432	3	SNA	
R201,R206	2007-002667	R-CHIP	90.9Kohm,1%,1/4W,TP,3216	2	SNA	
R203	2007-000263	R-CHIP	1.82Kohm,1%,1/8W,TP,2012	1	SNA	

■ OUTDOOR PCB : DB93-02893A(MH068FXEA4/MH080FXEA4/MH30VP2X/MH30VW2X)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
CN50	3711-000795	CONNECTOR-HEADER	BOX,2P,1R,2.5mm,STRAIGHT,SN,BLU	1	SNA	
CN60	3711-003843	CONNECTOR-HEADER	BOX,8P,1R,2mm,STRAIGHT,SN	1	SNA	
CN71	3711-004236	CONNECTOR-HEADER	BOX,6P,1R,2mm,STRAIGHT,SN	1	SNA	
CN72,CN61	3711-004379	CONNECTOR-HEADER	BOX,4P,1R,2mm,STRAIGHT,SN	2	SNA	
CN73	3711-003942	CONNECTOR-HEADER	BOX,2P,1R,2mm,STRAIGHT,SN	1	SNA	
R411,R416	2007-000254	R-CHIP	1.62Kohm,1%,1/8W,TP,2012	2	SNA	
RY06,RY03,RY04,RY05, RY07	3501-001238	RELAY-POWER	DC12V,3A 250V AC,-,-,10mS,10mS	5	SNA	
C003,C007	2301-001285	C-FILM,LEAD-PPF	680nF,10%,275V,BK,31x11x21mm,27.5	2	SNA	
C004,C005,C009,C010	2201-000154	DISC	RADIAL,SCE,10nF,2kV,14FF7	4	SNA	
C006	2301-001325	C-FILM,LEAD-PPF	330nF,10%,275V,TP,26x8.5x18mm,22	1	SNA	
C008	2301-000141	C-FILM,LEAD-PEF	10nF,10%,630V,TP,16x11x7.5mm,5	1	SNA	
C101,C102,C103	2401-003740	C-AL	560uF,20%,400V,WT,BK,35x45mm,10	3	SNA	
C104	2401-000470	C-AL	10uF,20%,450V,GP,TP,13x20mm,5m	1	SNA	
C105,C106	2201-000322	C-CERAMIC,DISC	2.2nF,10%,2kV,Y5P,TP,13x5mm,10	2	SNA	
C107,C428,C705	2401-001552	C-AL	47uF,20%,35V,GP,TP,6.3x11,2.5	3	SNA	
C108	2203-001414	C-CER,CHIP	330nF,10%,50V,X7R,TP,2012	1	SNA	
C109,C112,C116,C117,C121,C302, C303,C304,C305,C306,C404,C405, C406,C407,C408,C409,C410,C417, C418,C429,C430,C501,C502,C503, C504,C505,C506,C508,C509,C510, C511,C513,C707,C714	2203-000192	C-CER,CHIP	100nF,+80-20%,50V,Y5V,TP,2012	34	SNA	
C110,C114,C119,C806,C807	2401-000832	C-AL	220uF,20%,25V,GP,TP,8x11.5,5	5	SNA	
C113,C122,C803	2203-005261	C-CER,CHIP	1000nF,10%,25V,X7R,-,3216	3	SNA	
C118,C401,C402,C403	2401-002300	C-AL	47uF,20%,50V,GP,TP,6.3x11,5	4	SNA	
C123	2401-000303	C-AL	100uF,20%,25V,GP,TP,6.3x11,5	1	SNA	
C201,C203,C204,C205,C301,C427, C601,C602,C603,C701C702,C703, C710,C711,C802,C901,C902,C903	2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	18	SNA	
C202,C512,C708,C712,C713	2203-000189	C-CER,CHIP	100nF,+80-20%,25V,Y5V,TP,1608	5	SNA	
C411,C412,C413,C414,C415,C416,C704	2203-000126	C-CER,CHIP	1.2nF,10%,50V,X7R,TP,2012	7	SNA	
C419,C420	2203-000609	C-CER,CHIP	22nF,10%,50V,X7R,TP,2012	2	SNA	
C421	2401-002274	C-AL	220uF,20%,35V,GP,TP,10x16,5	1	SNA	
C422,C804,C805	2306-000123	C-FILM,LEAD-PPF	100nF,5%,630V,BK,26x16.5x8.5,2	3	SNA	
C423,C425	2203-000495	C-CER,CHIP	2.2nF,10%,50V,X7R,TP,2012	2	SNA	
C424	2203-000891	C-CER,CHIP	4.7nF,10%,50V,X7R,TP,2012	1	SNA	
C426	2203-000818	C-CER,CHIP	0.033nF,5%,50V,C0G,TP,2012	1	SNA	
C706,C507	2203-000979	C-CER,CHIP	47nF,10%,50V,X7R,TP,2012	2	SNA	
C709	2401-003036	C-AL	100uF,20%,16V,GP,TP,5x11mm,5mm	1	SNA	
CD31,CD32	0406-001109	DIODE-TVS	SAC5.0,7.6/-/-V,500W,DO-15	2	SNA	
CN51	3711-000939	CONNECTOR-HEADER	BOX,4P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN52	3711-000940	CONNECTOR-HEADER	BOX,4P,1R,2.5mm,STRAIGHT,SN	1	SNA	

■ OUTDOOR PCB : DB93-02893A(MH068FXEA4/MH080FXEA4/MH30VP2X/MH30VW2X)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
CN53	3711-000998	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN,RED	1	SNA	
CN54	3711-001000	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN55	3711-000997	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN56	3711-000996	CONNECTOR-HEADER	BOX,5P,1R,2.5mm,STRAIGHT,SN	1	SNA	
CN57	3711-004182	CONNECTOR-HEADER	BOX,10P,1R,2mm,STRAIGHT,SN,NTR	1	SNA	
CN58	3711-000176	CONNECTOR-HEADER	1WALL,2P,1R,3.96mm,STRAIGHT,SN	1	SNA	
CN59	3711-004349	CONNECTOR-HEADER	BOX,3P,1R,2mm,STRAIGHT,SN	1	SNA	
CN62	3711-000262	CONNECTOR-HEADER	1WALL,3P,1R,7.92mm,STRAIGHT,SN,W	1	SNA	
D102,D401,D402,D403	0402-000351	DIODE-RECTIFIER	1N4937,600V,1A,DO-41,TP	4	SNA	
D103	0402-001427	DIODE-RECTIFIER	ES1D,200V,1A,DO-214AC,TP	1	SNA	
D201,D451	0407-000123	DIODE-ARRAY	DAN202K,80V,100mA,CA2-3,SOT-23,TP	2	SNA	
DSA	DB47-00016A	POSISTOR	DSA-332mA,2pF MAX,100Mohm,ASM-3500	1	SA	
FT00	DB27-00023A	COIL CHOKE-LS320038	LS320038,,3.8mH,10%,	1	SNA	
FT01	DB27-00024A	COIL CHOKE-LS321026	LS321026,,2.6mH,10%	1	SNA	
FUSE	3601-001381	FUSE-Cartrage	250V/30A	1	SNA	
IC01	DB09-00238A	IC MICOM	ML66517,-,80 P,5 V,25 MHz,OTP,-,24,16,QF	1	SNA	
IC11	1203-003527	IC-PWM CONTROLLER	TOP243,DIP,7P,9.83x6.6mm,PLASTIC	1	SNA	
IC12,IC61,IC62	0604-001172	PHOTO-COUPLER	TR,100-300,200mW,SOP,TP	3	SNA	
IC13	1203-002948	IC-POSI.ADJUST REG	TL431ACD,SOP,8P,4.9x3.9mm,PLASTIC	1	SNA	
IC16,IC19	DB95-00594A	ASSY-VOLTAGE REGULATOR	KIA78M05,KA78M05	2	SNA	
IC20	1006-001210	IC-BUS TRANSCEIVER	485,DIP,8P,300MIL,SINGLE,ST,PL	1	SNA	
IC21,IC42	1202-000104	IC-VOLTAGE COMP	393,SOP,8P,150MIL,DUAL,36V,CMO	2	SNA	
IC30	0801-000393	IC-CMOS LOGIC	74HC86,OR GATE,SOP,14,150MIL,QUAD,S	1	SNA	
IC31	0604-001003	PHOTO-COUPLER	TR,50-150%,200mW,DIP-4,ST	1	SNA	
IC41	1201-000166	IC-OP AMP	LM358,SOP,ST,8P,150MIL,DUAL,100V/mV,PLASTIC	1	SNA	
IC71	1103-001175	IC-EEPROM	93LC56,128x16,SOP,8P,5x4mm,2.5/6.0V,-40	1	SNA	
IC72	0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	1	SNA	
IC73,IC59	1203-003334	IC-RESET	S-801,SOT-23,5P,2.9x1.6mm,PLASTIC,3.716	2	SNA	
IC81	DB95-00595A	ASSY-PHOTO COUPLER	ASSY-PHOTO COUPLER	1	SNA	
LED1	0601-001373	LED	ROUND,RED,3mm,630nm	1	SNA	
LED2	0601-001375	LED	ROUND,GRN,3mm,570nm	1	SNA	
LED3	0601-000402	LED	ROUND,YEL,3x4.0mm,585nm,-	1	SNA	
PT02	DB26-00049A	TRANS PULSE	PT_50,,10,65.5,8~14,EI2218,	1	SNA	
Q801	0504-000127	TR-DIGITAL	KSR1102,NPN,200mW,10K/10K,SOT-23,TP	1	SNA	
Q901,Q902,Q903,Q904	0504-000001	TR-DIGITAL	DTA114EKA,PNP,200mW,10K/10K,SOT-23,TP	4	SNA	
R001	2006-001080	R-CEMENT(S)	200ohm,5%,5W,CB,BK,13x9x25.5mm	1	SNA	
R101	2003-000855	R-METAL OXIDE(S)	47Kohm,5%,3W,AA,TP,6x16mm	1	SNA	
R102	2007-001074	R-CHIP	6.8ohm,5%,1/8W,TP,2012	1	SNA	
R103,R512,R601,R604	2007-000468	R-CHIP	1Kohm,5%,1/8W,TP,2012	4	SNA	
R104	2007-000686	R-CHIP	3.3Kohm,5%,1/8W,TP,2012	1	SNA	
R105	2007-001222	R-CHIP	9.09Kohm,1%,1/8W,TP,2012	1	SNA	

■ OUTDOOR PCB : DB93-02893A(MH068FXEA4/MH080FXEA4/MH30VP2X/MH30VW2X)(cont.)

Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
R106,R203,R204	2007-000263	R-CHIP	1.82Kohm,1%,1/8W,TP,2012	3	SNA	
R107	2003-000708	R-OXIDE	47ohm,5%,1W,MOR1W47ohmJTB	1	SNA	
R112,R113,R114	2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	3	SNA	
R115	2007-000385	R-CHIP	14.3Kohm,1%,1/4W,TP,3216	1	SNA	
R202 R207	2007-002667	R-CHIP	90.9Kohm,1%,1/4W,TP,3216	2	SNA	
R205,R208	2007-000671	R-CHIP	2Kohm,5%,1/8W,TP,2012	2	SNA	
R301	2007-000023	R-CHIP	120ohm,5%,1/8W,TP,2012	1	SNA	
R302,R304,R305,R315,R513,R514, R515,R516,R706,R708,R709,R710, R711,R712,R716,R717,R720,R725, R726,R805	2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	20	SNA	
R307,R308,R309,R310, R311,R312,R313,R314	2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	8	SNA	
R401,R402,R403,R404, R405,R406,R425,R426	2007-000290	R-CHIP	100ohm,5%,1/8W,TP,2012	8	SNA	
R407	2007-000872	R-CHIP	4.7Kohm,5%,1/8W,TP,2012	1	SNA	
R408,R409,R410	2007-000781	R-CHIP	33ohm,5%,1/8W,TP,2012	3	SNA	
R412,R427,R718,R719	2007-000465	R-CHIP	1Kohm,1%,1/8W,TP,2012	4	SNA	
R413,R414,R415,R429,R430,R431	2007-008261	R-CHIP	150Kohm,1%,1/2W,TP,5025	6	SNA	
R417	2007-008562	R-CHIP	30.1ohm,1%,1/8W,TP,2012	1	SNA	
R418,R419,R432	2007-009114	R-CHIP	110Kohm,1%,1/2W,TP,5025	3	SNA	
R420	2007-000515	R-CHIP	2.7Kohm,1%,1/8W,TP,2012	1	SNA	
R421	2006-001130	R-CEMENT	7mohm,5%,15W,WR15P,ABCO	1	SNA	
R422	2007-000938	R-CHIP	47Kohm,1%,1/8W,TP,2012	1	SNA	
R423,R509,R707	2007-000546	R-CHIP	20Kohm,5%,1/8W,TP,2012	3	SNA	
R424	2007-000868	R-CHIP	4.7Kohm,1%,1/8W,TP,2012	1	SNA	
R501,R504	2007-002903	R-CHIP	18.2K-F,1/12W,1608	2	SNA	
R502,R503,R724	2007-000613	R-CHIP	24Kohm,1%,1/8W,TP,2012	3	SNA	
R505,R506,R507,R508,R723	2007-000763	R-CHIP	330ohm,1%,1/10W,TP,1608	5	SNA	
R510,R704	2007-000477	R-CHIP	1Mohm,5%,1/8W,TP,2012	2	SNA	
R511,R911,R912,R913	2007-000964	R-CHIP	5.1Kohm,5%,1/8W,TP,2012	4	SNA	
R602,R603	2007-000766	R-CHIP	330ohm,5%,1/8W,TP,2012	2	SNA	
R701,R702,R703	2007-000282	R-CHIP	100Kohm,5%,1/8W,TP,2012	3	SNA	
R705	2007-000976	R-CHIP	5.62Kohm,1%,TP,2012	1	SNA	
R713,R714,R715	2007-000511	R-CHIP	MCR10EZH,J242,2.4Kohm,1/8W,5%,2012	3	SNA	
R721,R722	2007-000297	R-CHIP	10Kohm,1%,1/8W,TP,2012	2	SNA	
R722	2007-000297	R-CHIP	10Kohm,1%,1/8W,TP,2012	1	SNA	
R806,R807	2007-000553	R-CHIP	20ohm,5%,1/4W,TP,3216	2	SNA	
R808	2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	1	SNA	
R901,R902,R903,R904, R905,906,R907	2007-001318	R-CHIP	1Kohm,5%,1/4W,DA,TP,3216	7	SNA	
R908,R909,R910	2007-001175	R-CHIP	8.2Kohm,1%,1/10W,TP,1608	3	SNA	

■ OUTDOOR PCB : DB93-02893A(MH068FXEA4/MH080FXEA4/MH30VP2X/MH30VW2X)(cont.)

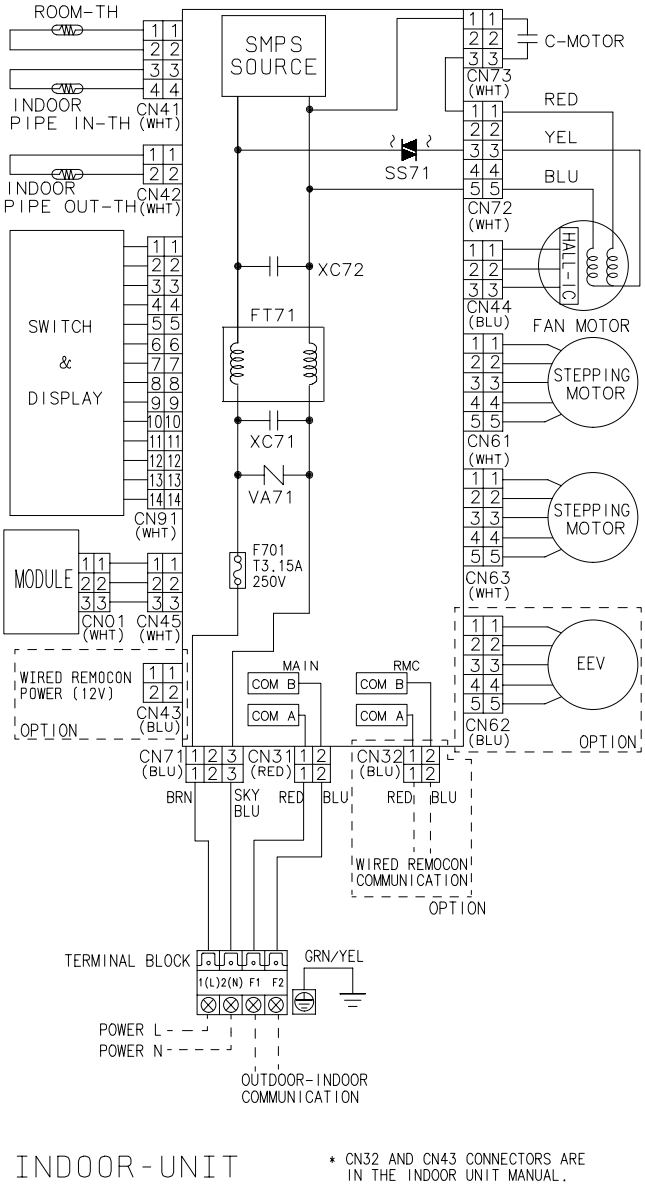
Location No.	Code No.	Description	Specification	Q'TY	SA/SNA	Remark
RY01	3501-001169	RELAY-POWER	12VDC,0.9W,20000mA,SPST,20mS,10mS	1	SA	
RY31	3501-001248	RELAY-MINIATURE	12V,-,11.7mA,DPDT,4mS,4mS	1	SNA	
VA01,VA02,VA03,VA04,VA05	1405-000154	VARISTOR	560V,2500A,17.5x7.5mm,TP	5	SNA	
XTAL01	2802-001221	RESONATOR-CERAMIC	6.25MHz,+/-0.5%,TP,8.5x6.5x4.0	1	SNA	
XTAL51	2802-001179	RESONATOR-CERAMIC	4MHz,0.5%,BK,8x3x5.5mm	1	SNA	
ZD21,ZD22,ZD72	0403-000282	DIODE-ZENER	MMBZ5232B,5%,225mW,SOT-23,TP	3	SNA	
IC50	DB09-00327A	IC MICOM	MB90F822,80P,5V,24MHz,SMT-0458-OA	1	SNA	
Fuse Clip	3602-001038	-	31.5*60	1	SNA	
BD01	0402-001553	DIODE-BRIDGE	GBPC3506W,600V,35A,SQUARE-4,BK	1	SNA	
D101	DB98-16587A	ASSY-DIODE-SHOTTKY	R3060G2	1	SNA	
D104,D105,D106	0402-001427	DIODE-RECTIFIER	ES1D,200V,1A,DO-214AC,TP	3	SNA	
IC51,IC52,IC53,IC54,IC55	0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	5	SNA	
IPM	DB95-00593A	ASSY-IPM	PS21869	1	SNA	
Q803	DB98-16589A	ASSY-IGBT	SGL160N60UF	1	SNA	
R002,R003	2007-007459	R-CHIP	470Kohm,5%,1/2W,DA,TP,5025	2	SNA	
R116,R117,R118	2007-009113	R-CHIP	680Kohm,5%,1W,TP,6432	3	SNA	
R201,R206	2007-002667	R-CHIP	90.9Kohm,1%,1/4W,TP,3216	2	SNA	
R203	2007-000263	R-CHIP	1.82Kohm,1%,1/8W,TP,2012	1	SNA	

MEMO

7. Wiring Diagram

7-1 Indoor Unit

■ MH✳✳✳FPEA✳/MH✳✳VP2-✳✳



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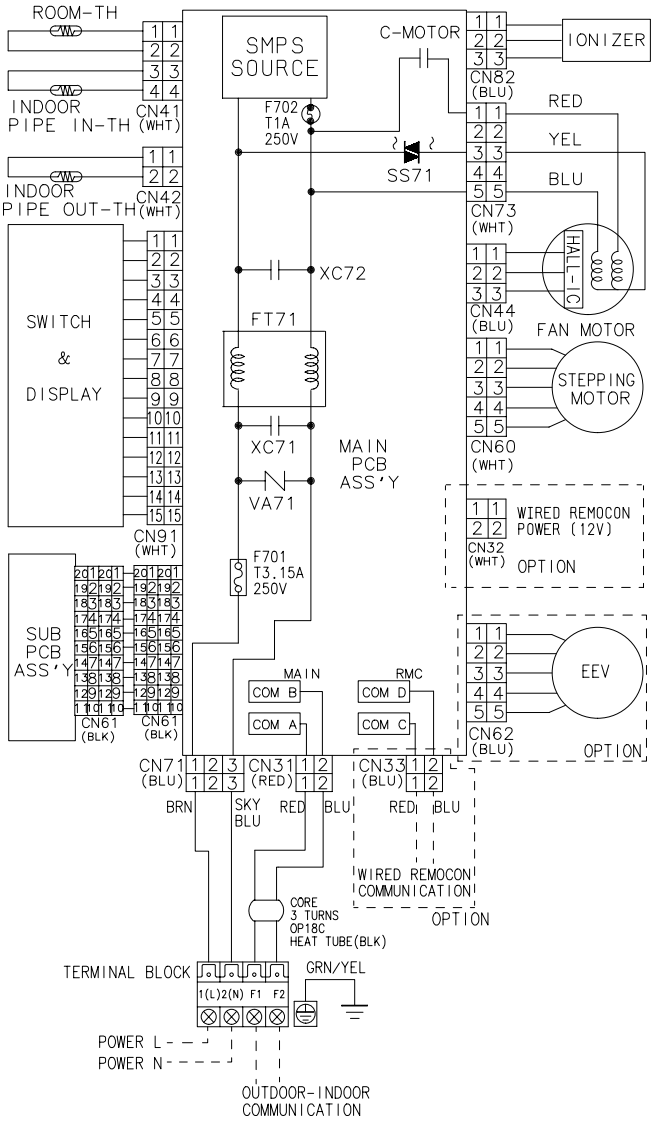
Indoor Unit(cont.)

■ MH✳✳✳FWEA/MH✳✳VW2-✳✳



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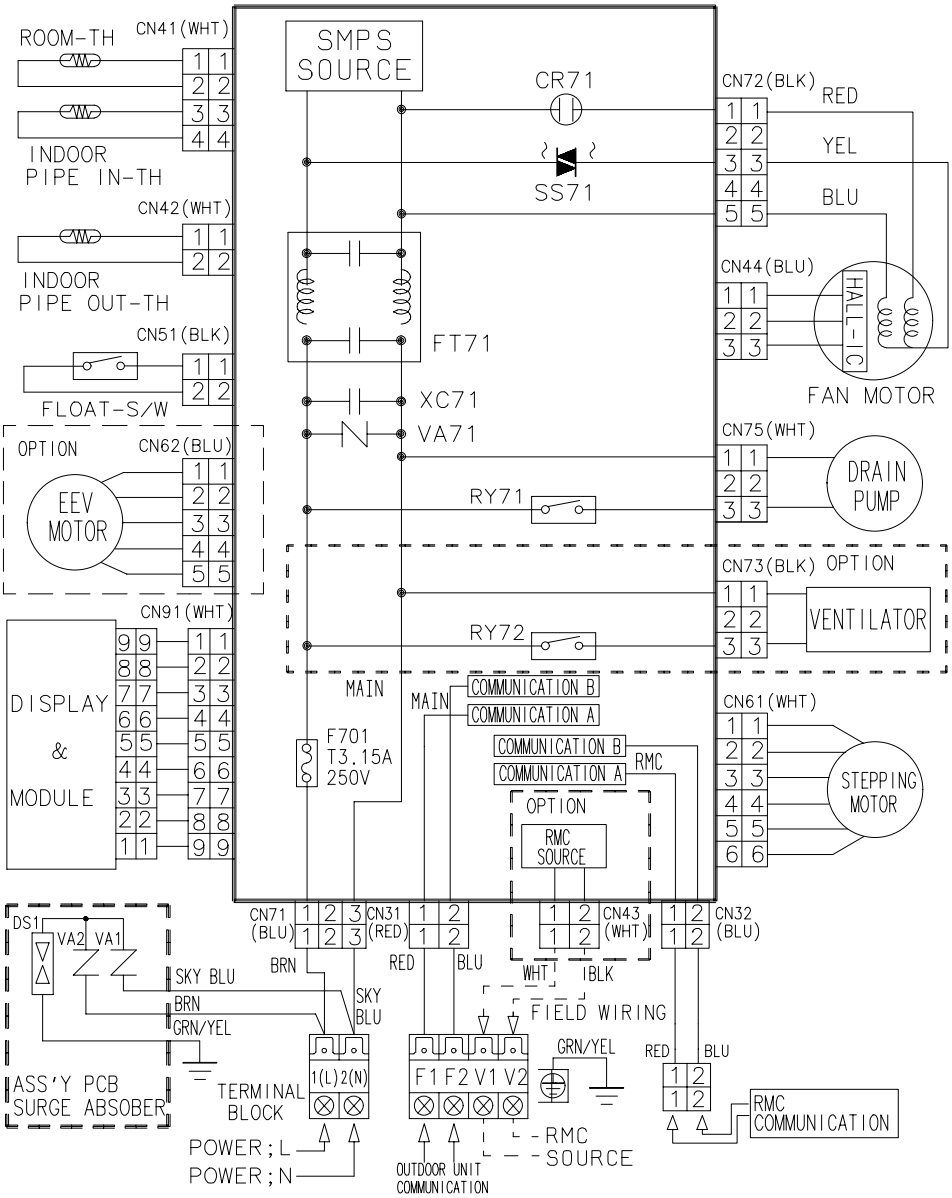
■ MH✳✳✳FKEA



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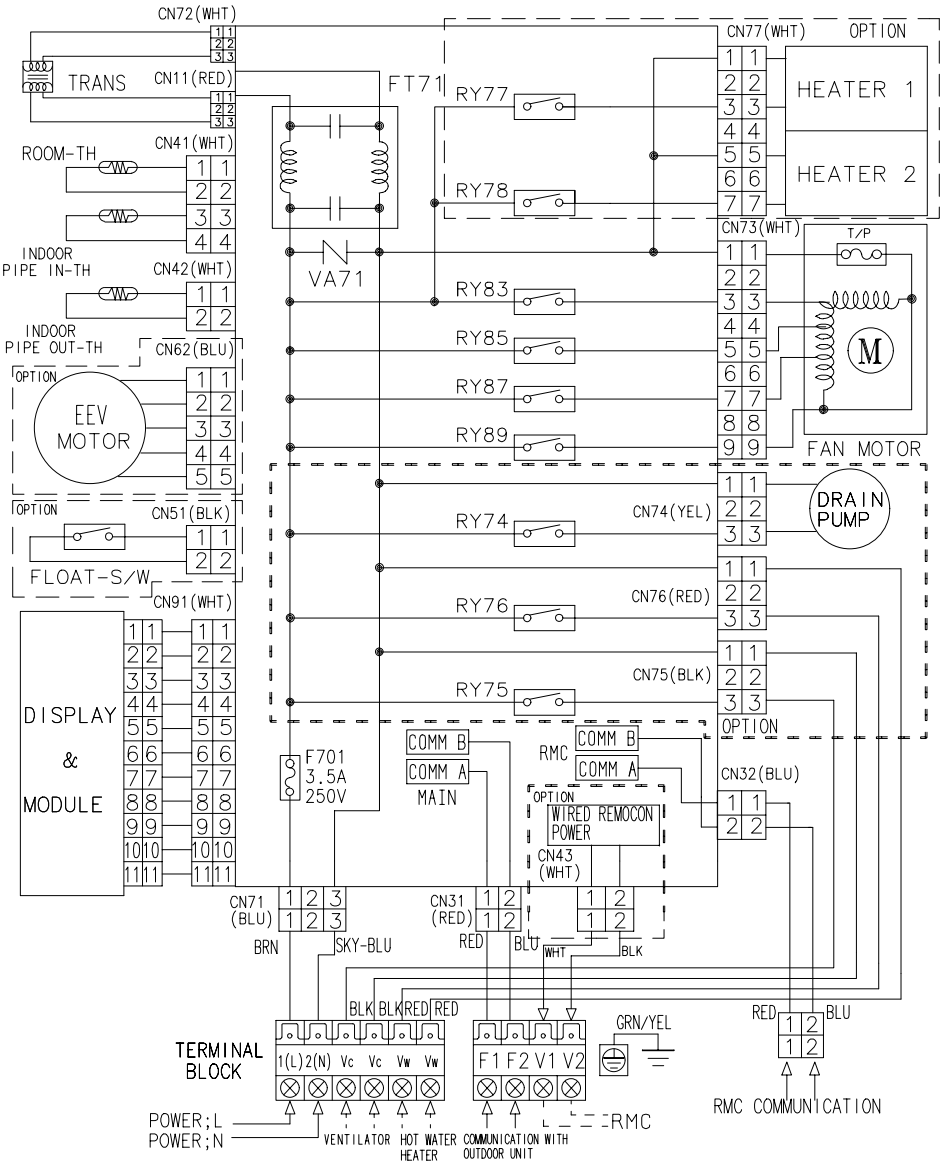
■ MH✳✳✳FDEA



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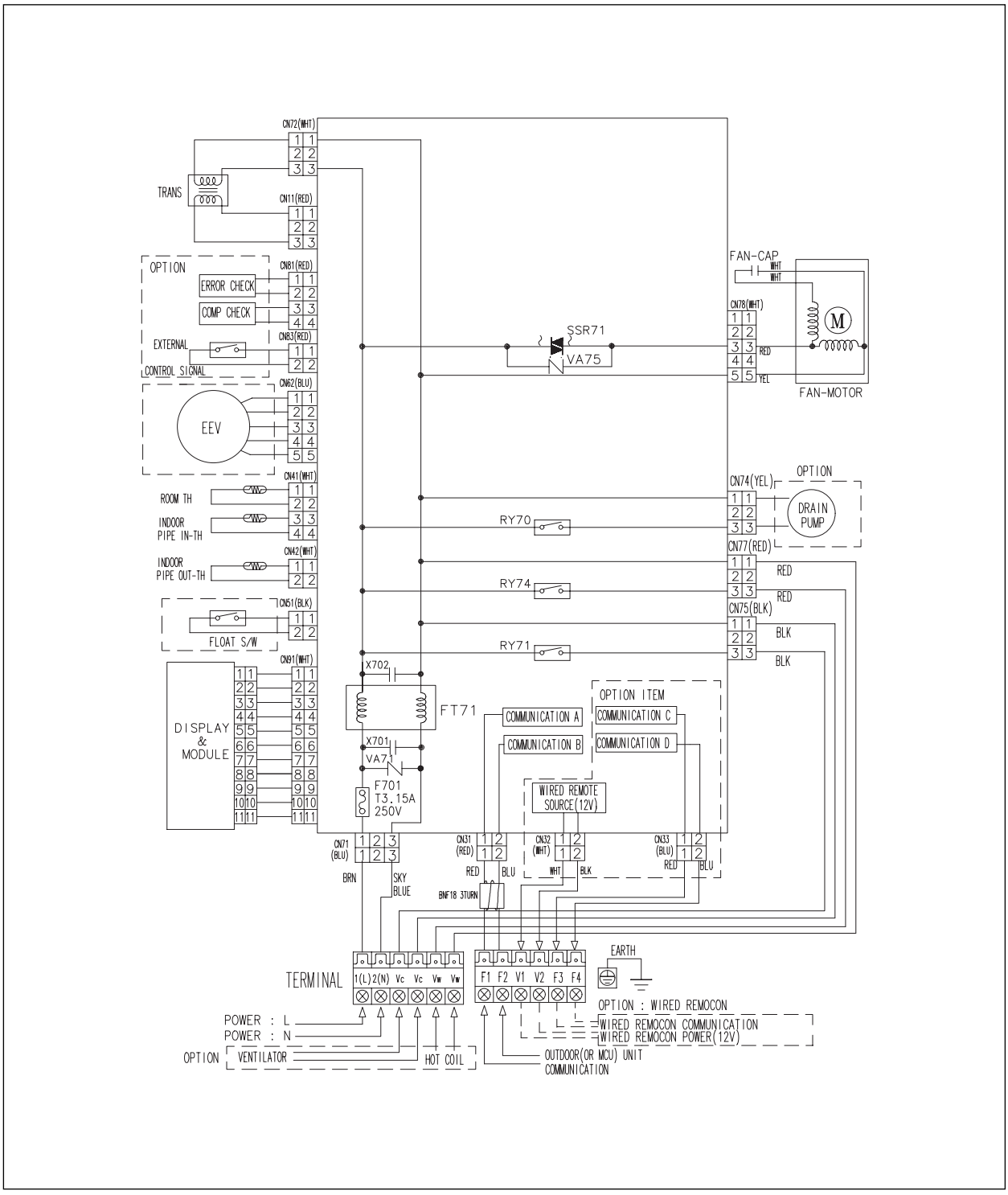
■ MH✳✳✳FEEA



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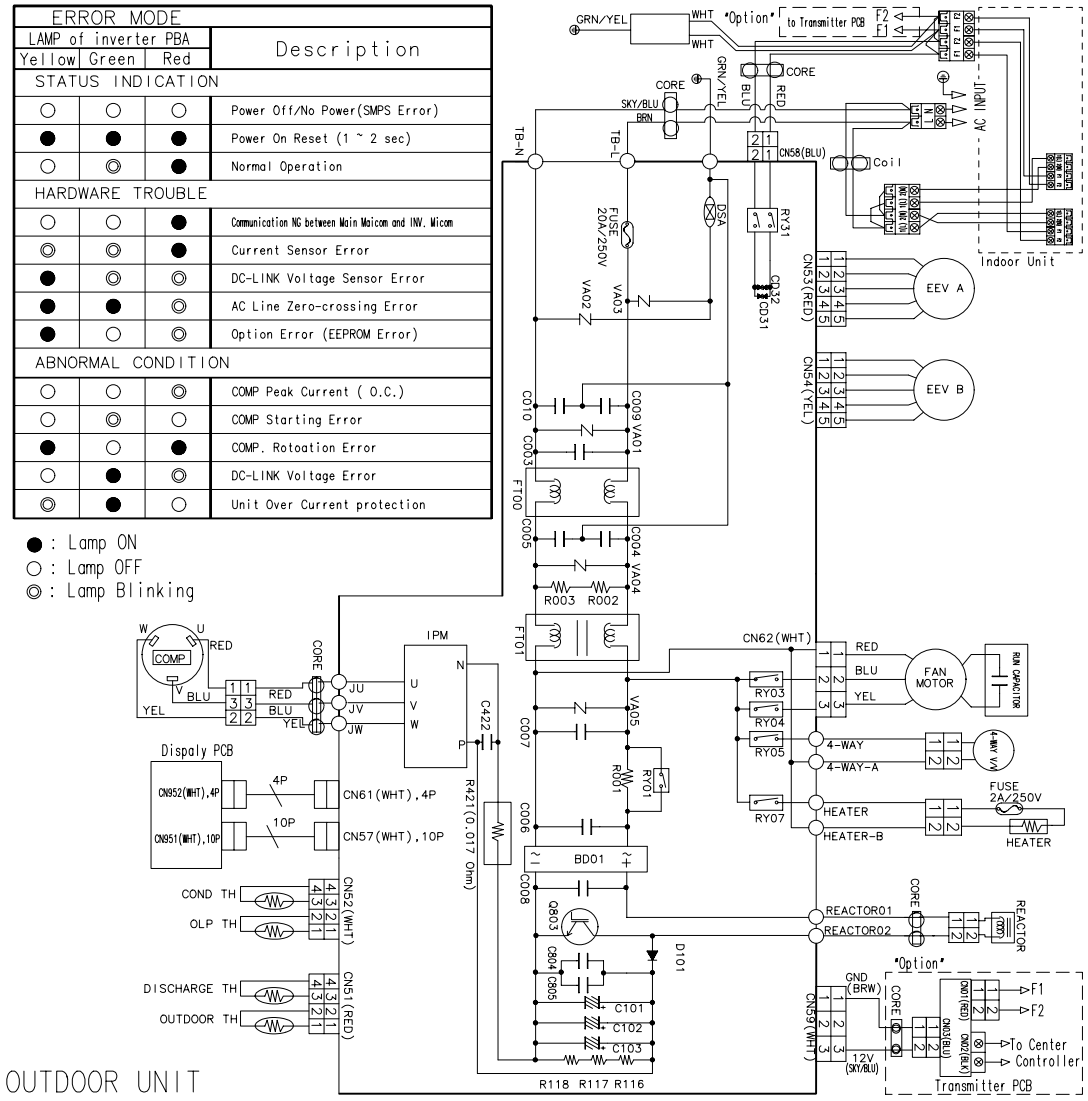
7-2 Outdoor Unit

■ MH040FXEA2/MH052FXEA2/MH14VP2X/MH16VP2X/MH18VP2X/MH19VP2X/MH14VW2X/MH16VW2X/MH18VW2X/MH19VW2X

ERROR MODE			
LAMP of inverter PBA			Description
Yellow	Green	Red	
STATUS INDICATION			
○	○	○	Power Off/No Power(SMPS Error)
●	●	●	Power On Reset (1 ~ 2 sec)
○	◎	●	Normal Operation
HARDWARE TROUBLE			
○	○	●	Communication NG between Main Maicom and INV. Micom
◎	◎	●	Current Sensor Error
●	◎	◎	DC-LINK Voltage Sensor Error
●	●	◎	AC Line Zero-crossing Error
●	○	◎	Option Error (EEPROM Error)
ABNORMAL CONDITION			
○	○	◎	COMP Peak Current (O.C.)
○	◎	○	COMP Starting Error
●	○	●	COMP. Rotoation Error
○	●	◎	DC-LINK Voltage Error
◎	●	○	Unit Over Current protection

● : Lamp ON
○ : Lamp OFF
◎ : Lamp Blinking



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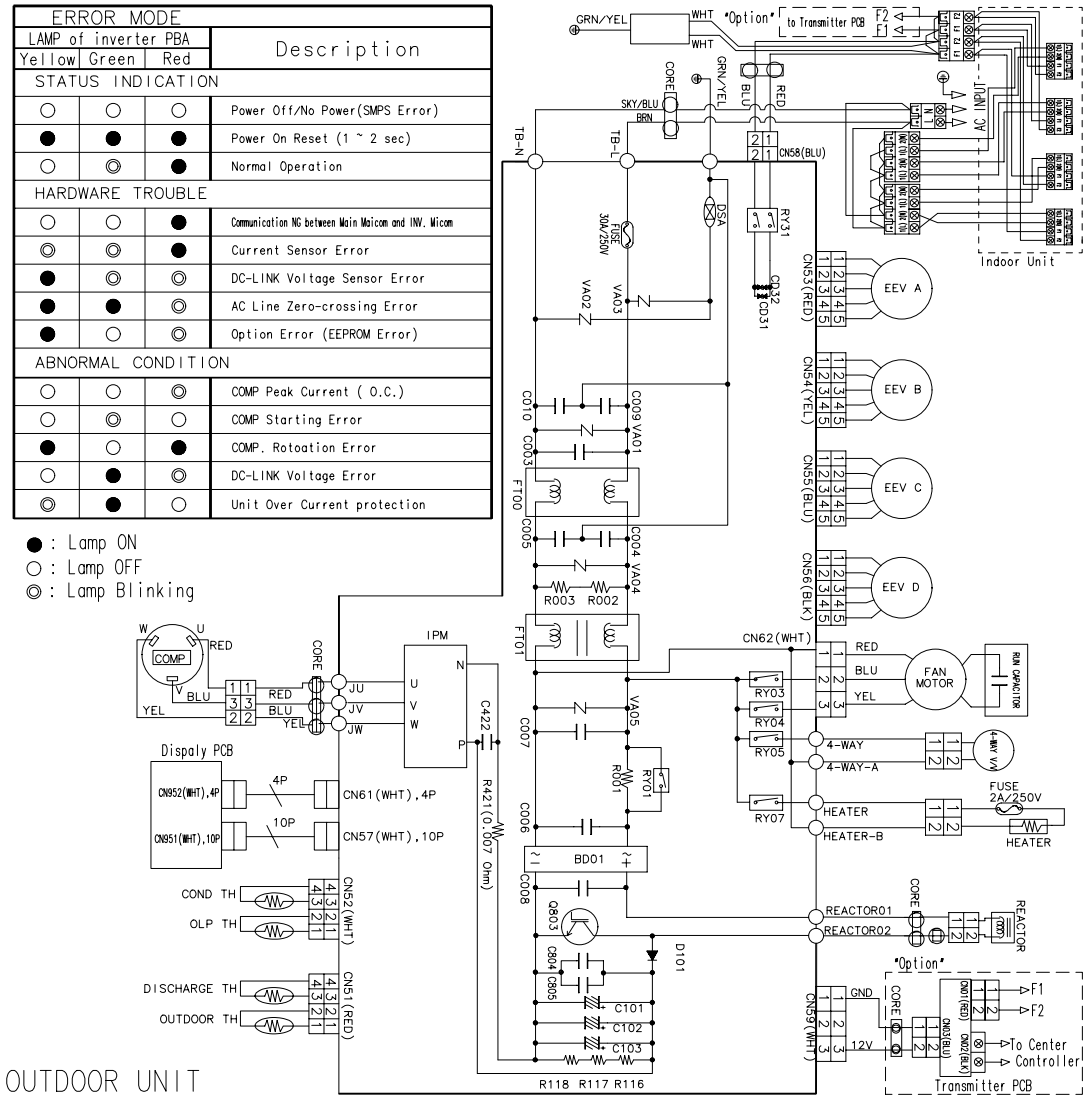
■ MH068FXEA4/MH080FXEA4/MH30VP2X/MH30VW2X

ERROR MODE			
LAMP of inverter PBA			Description
Yellow	Green	Red	
STATUS INDICATION			
○	○	○	Power Off/No Power(SMPS Error)
●	●	●	Power On Reset (1 ~ 2 sec)
○	◎	●	Normal Operation
HARDWARE TROUBLE			
○	○	●	Communication NG between Main Maicom and INV. Micom
◎	◎	●	Current Sensor Error
●	◎	◎	DC-LINK Voltage Sensor Error
●	●	◎	AC Line Zero-crossing Error
●	○	◎	Option Error (EEPROM Error)
ABNORMAL CONDITION			
○	○	◎	COMP Peak Current (O.C.)
○	◎	○	COMP Starting Error
●	○	●	COMP. Rotoation Error
○	●	◎	DC-LINK Voltage Error
◎	●	○	Unit Over Current protection

● : Lamp ON
○ : Lamp OFF
◎ : Lamp Blinking



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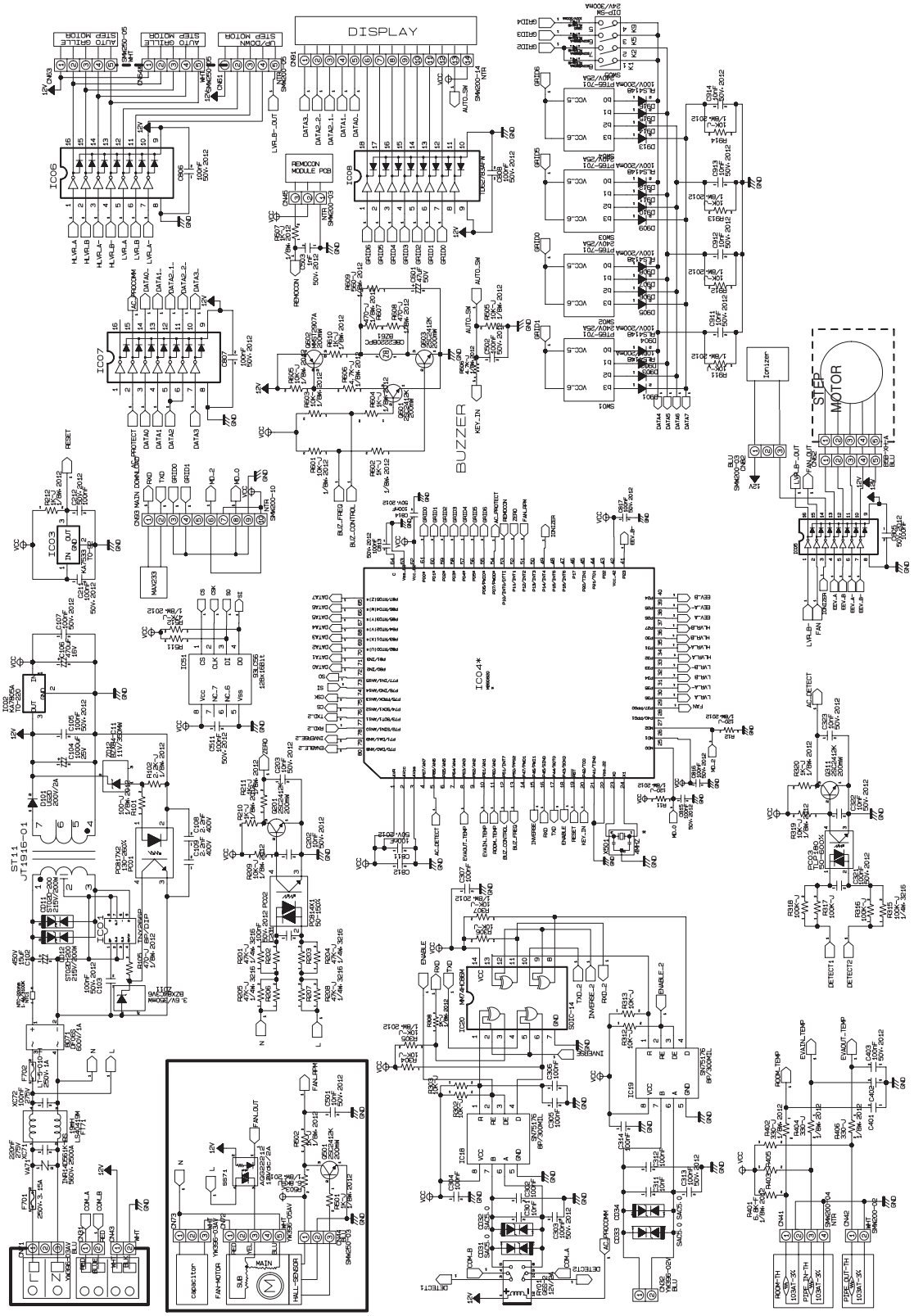
8. Schematic Diagram

8-1 Indoor Unit

■ MH✳✳✳FPEA✳/MH✳✳VP2-✳✳



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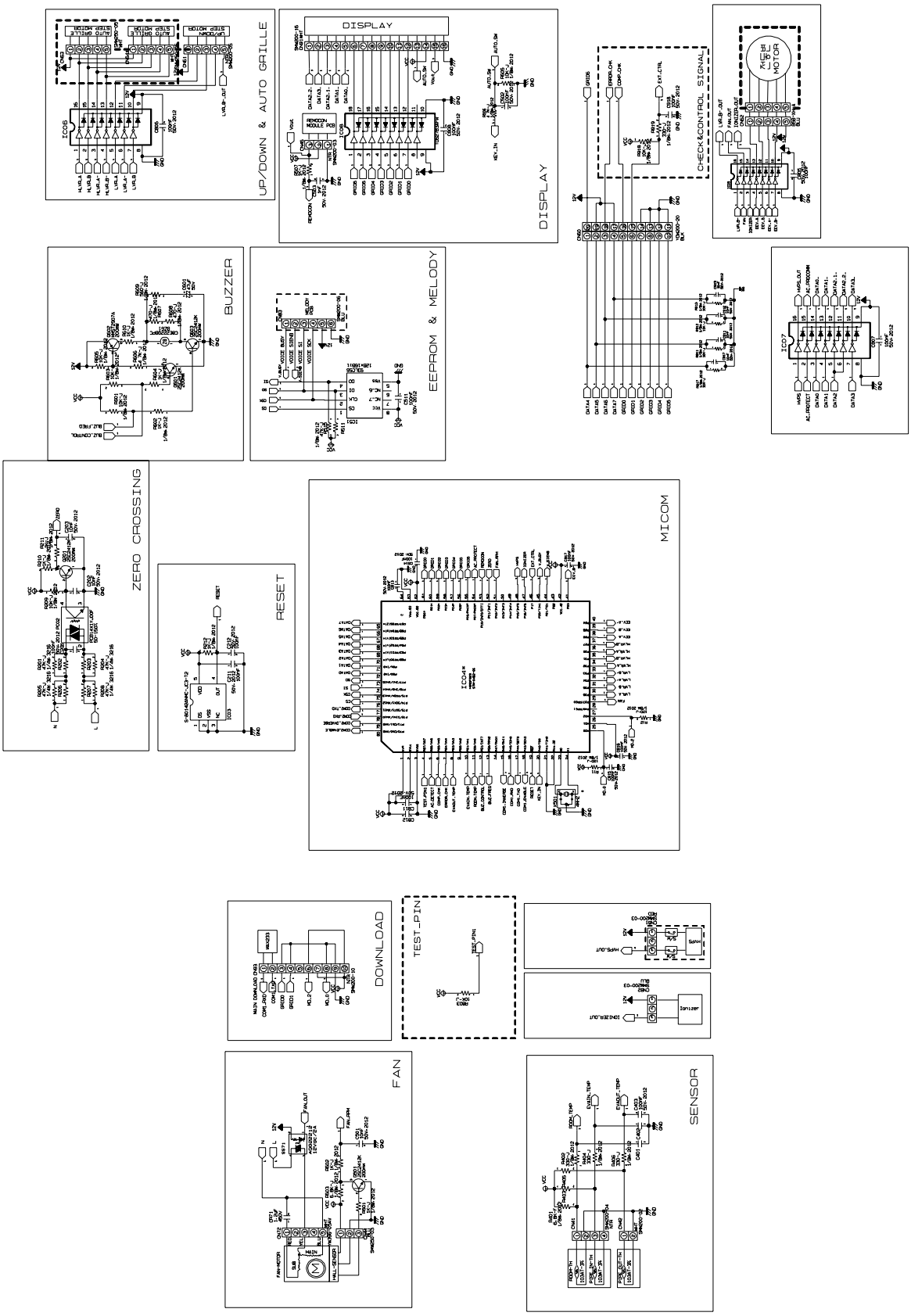
■ MH✳✳✳FWEA/MH✳✳VW2-✳✳



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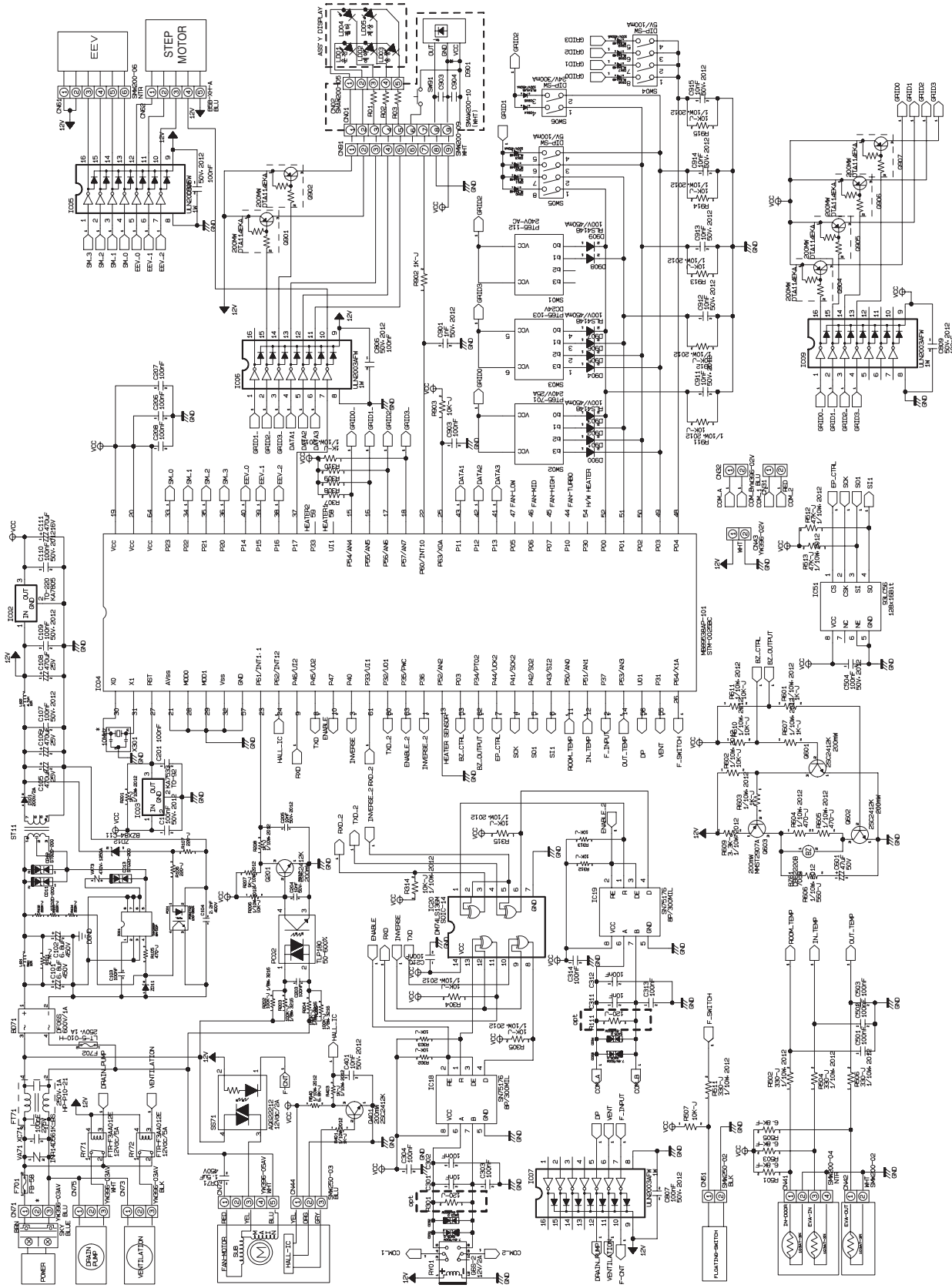
■ MH✳✳✳FKEA



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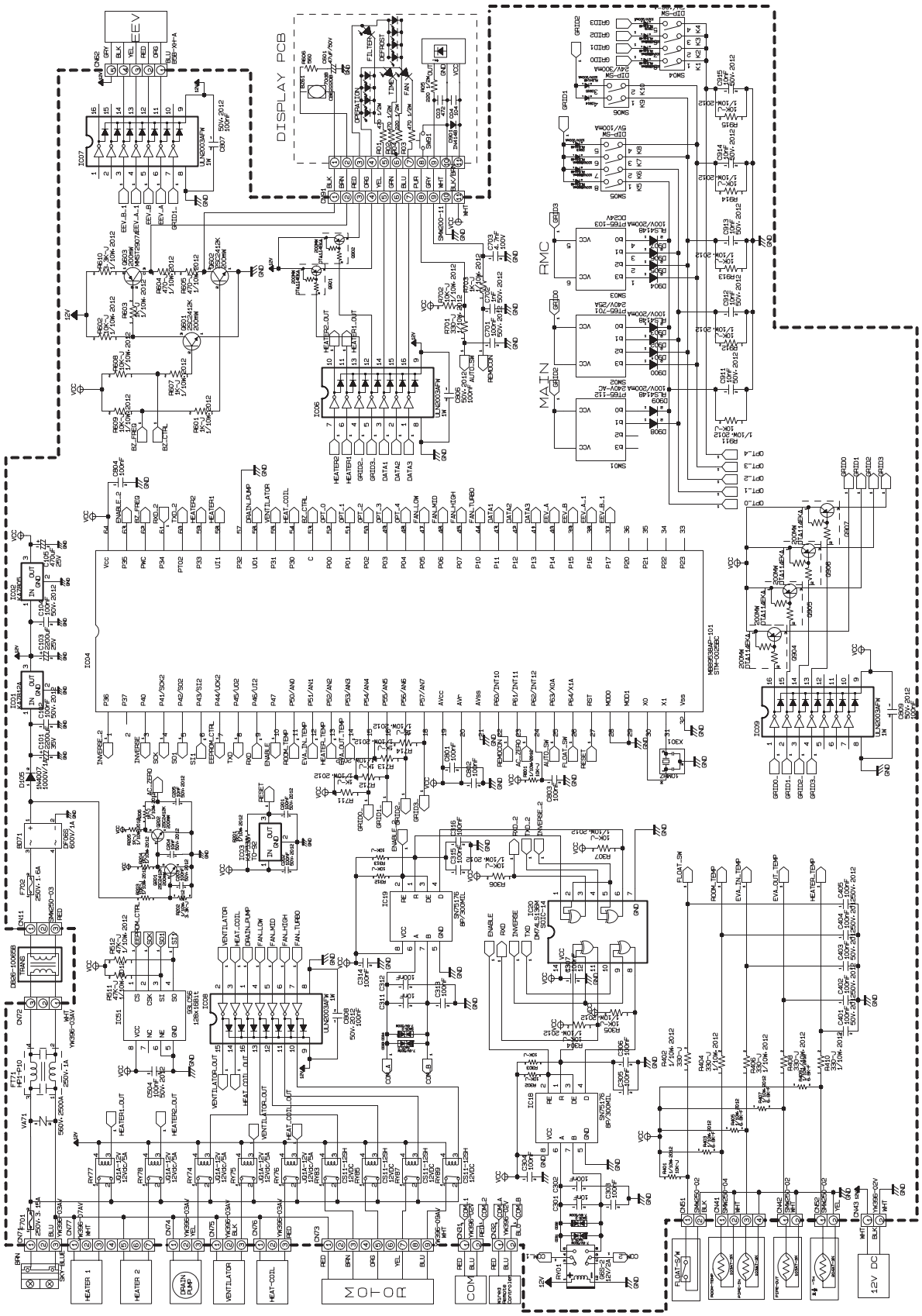
■ MH✳✳✳FDEA



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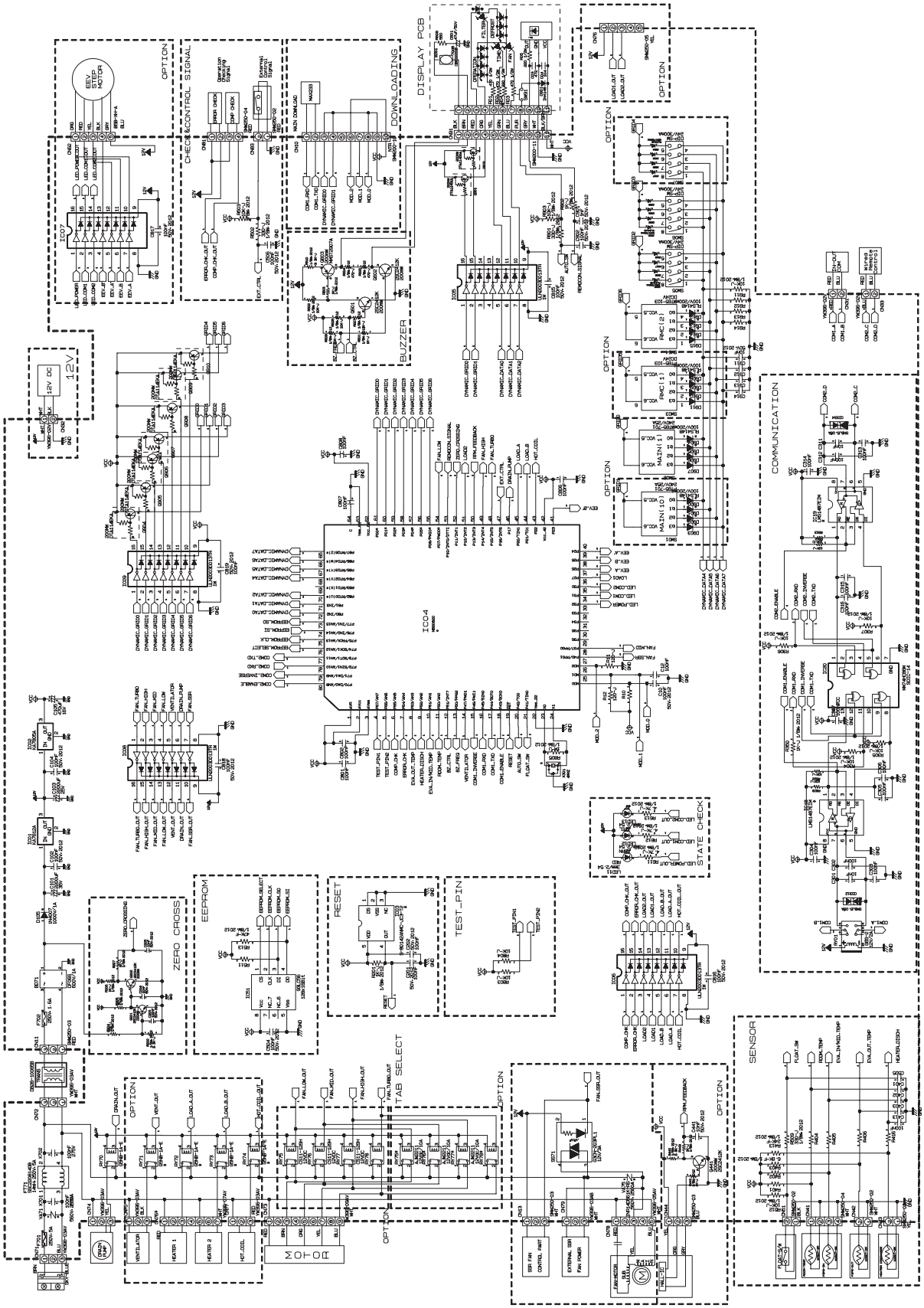
■ MH✳✳✳FEEA



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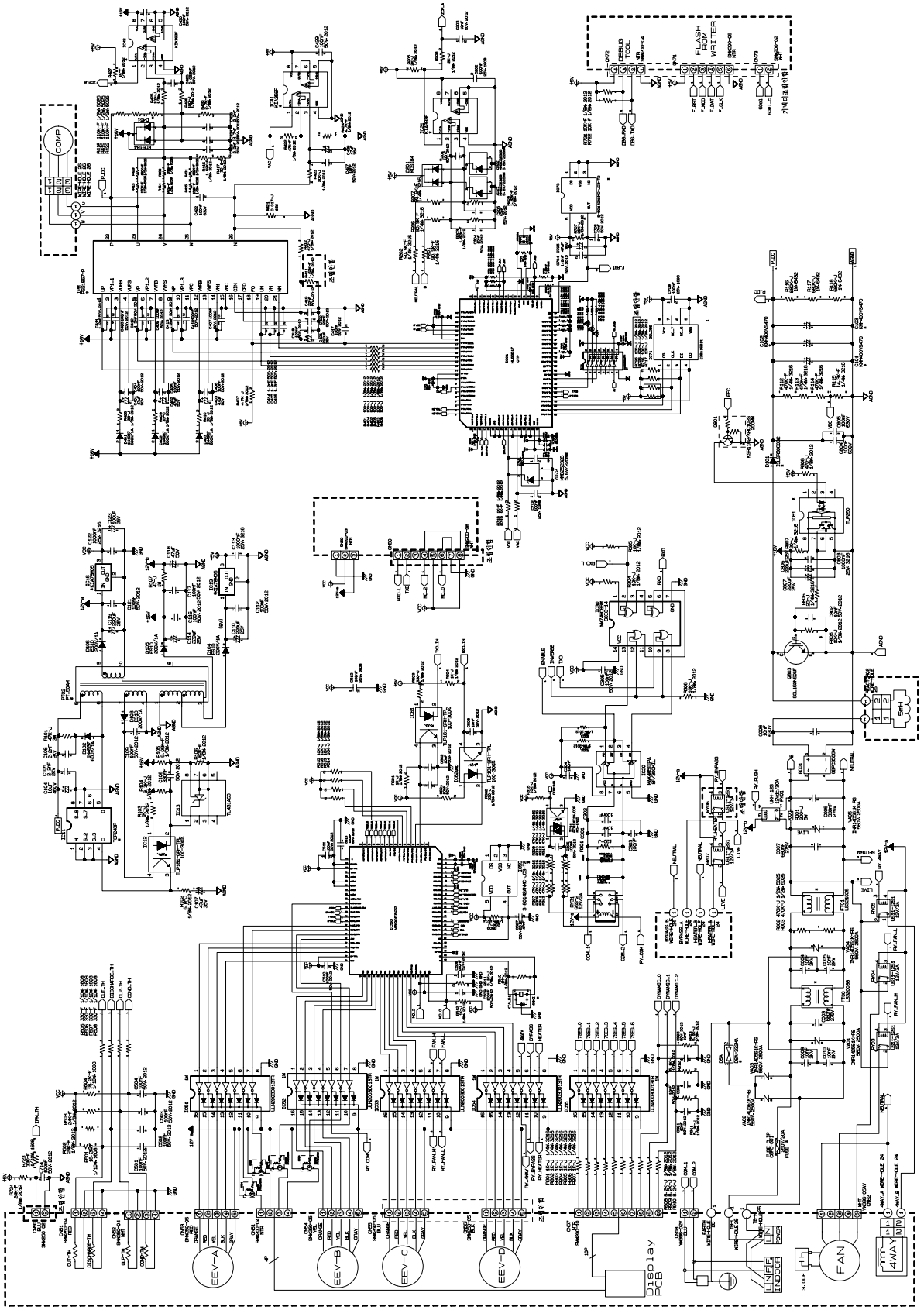
■ MH040FXEA2/MH052FXEA2/MH14VP2X/MH16VP2X/MH18VP2X/MH19VP2X/MH14VW2X/MH16VW2X/MH18VW2X/MH19VW2X



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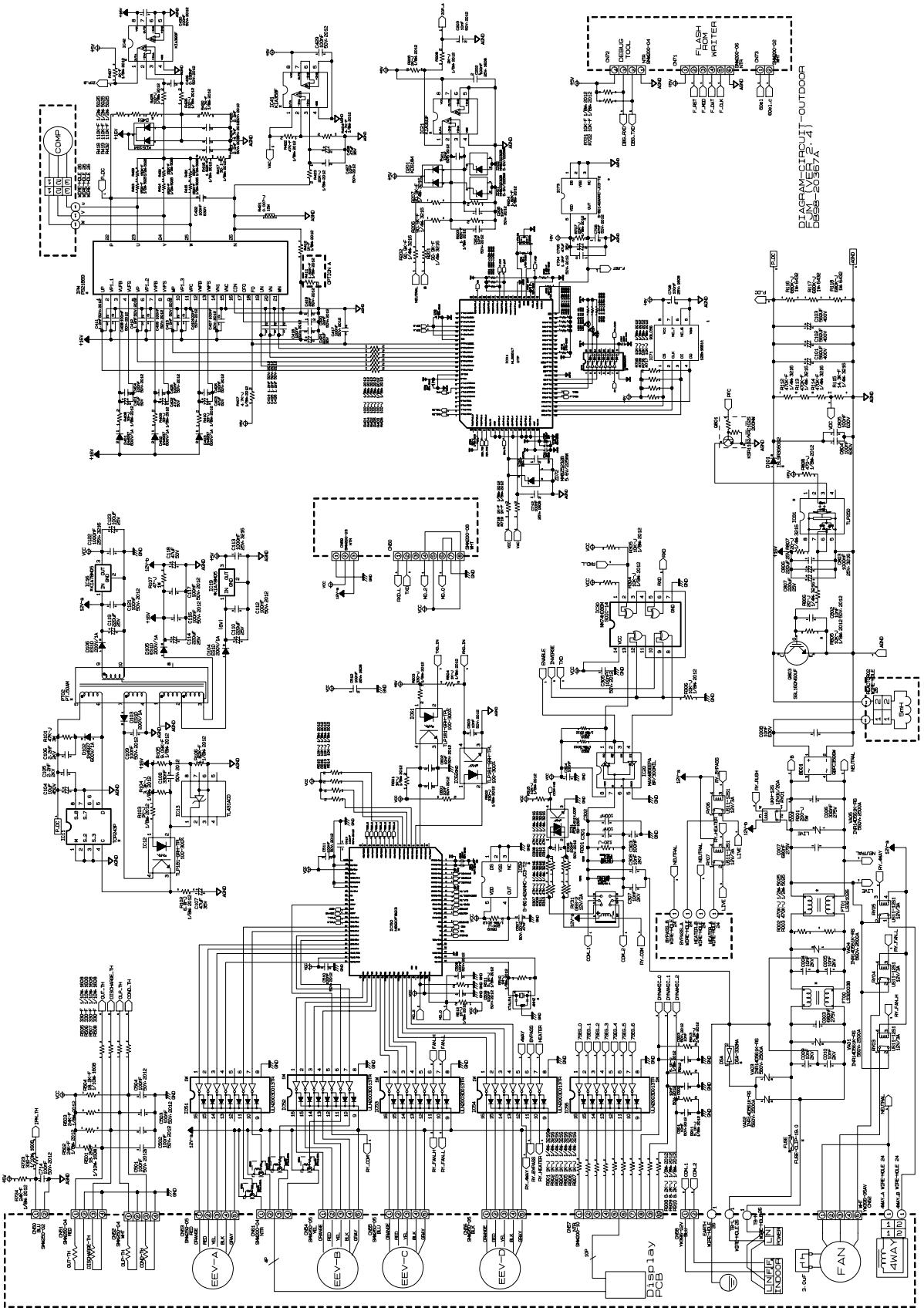
■ MH068FXEA4/MH080FXEA4/MH30VP2X/MH30VW2X



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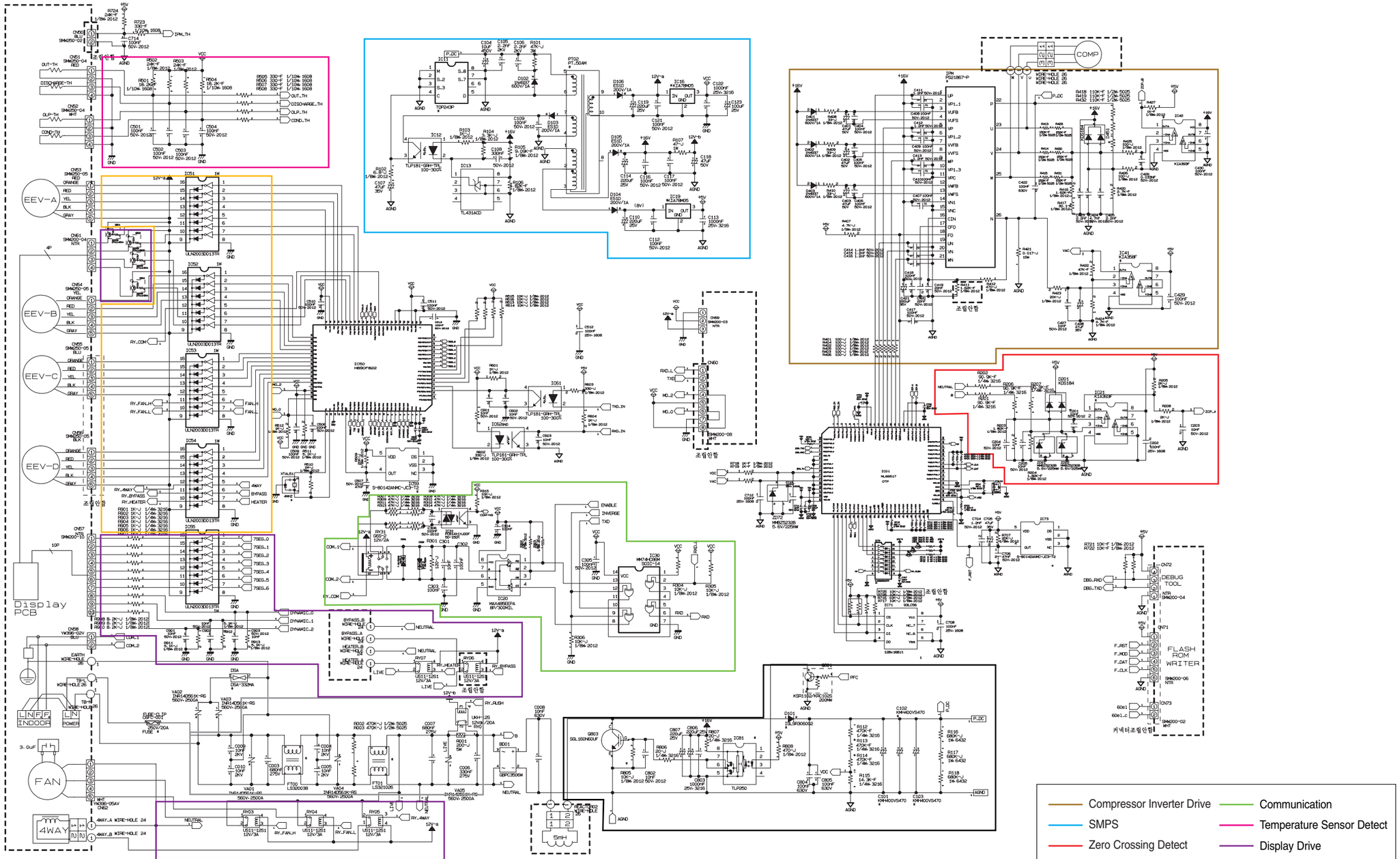
9. Circuit Descriptions

9-1 PCB Circuit Descriptions

9-1-1 Outdoor Unit(MH040FXEA2/MH052FXEA2/MH14VP2X/MH16VP2X/MH18VP2X/MH19VP2X/MH14VW2X/MH16VW2X/MH18VW2X/MH19VW2X)



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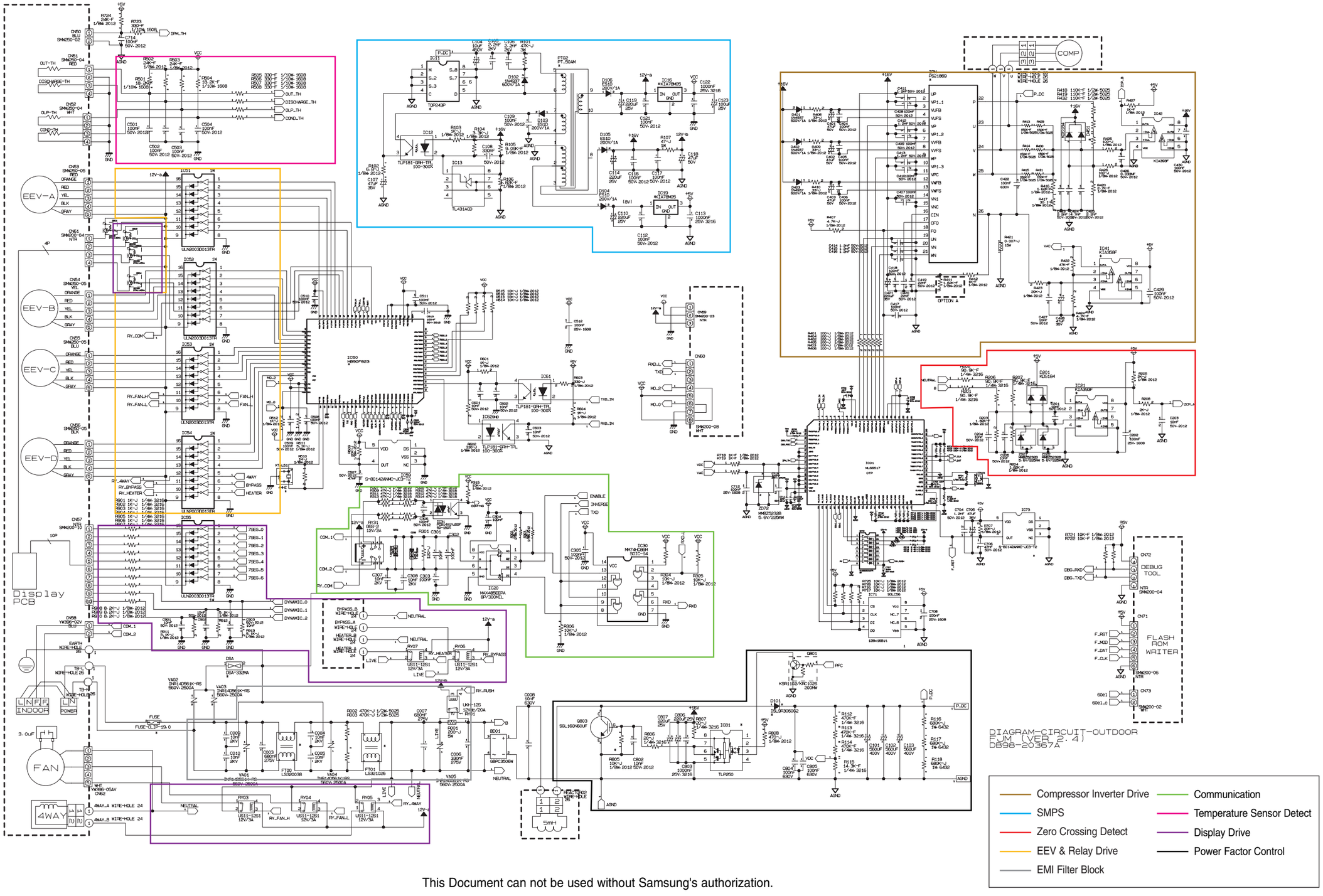
Circuit Descriptions

9-1-2 Outdoor Unit(MH068FXEA4/MH080FXEA4/MH30VP2X/MH30VW2X)



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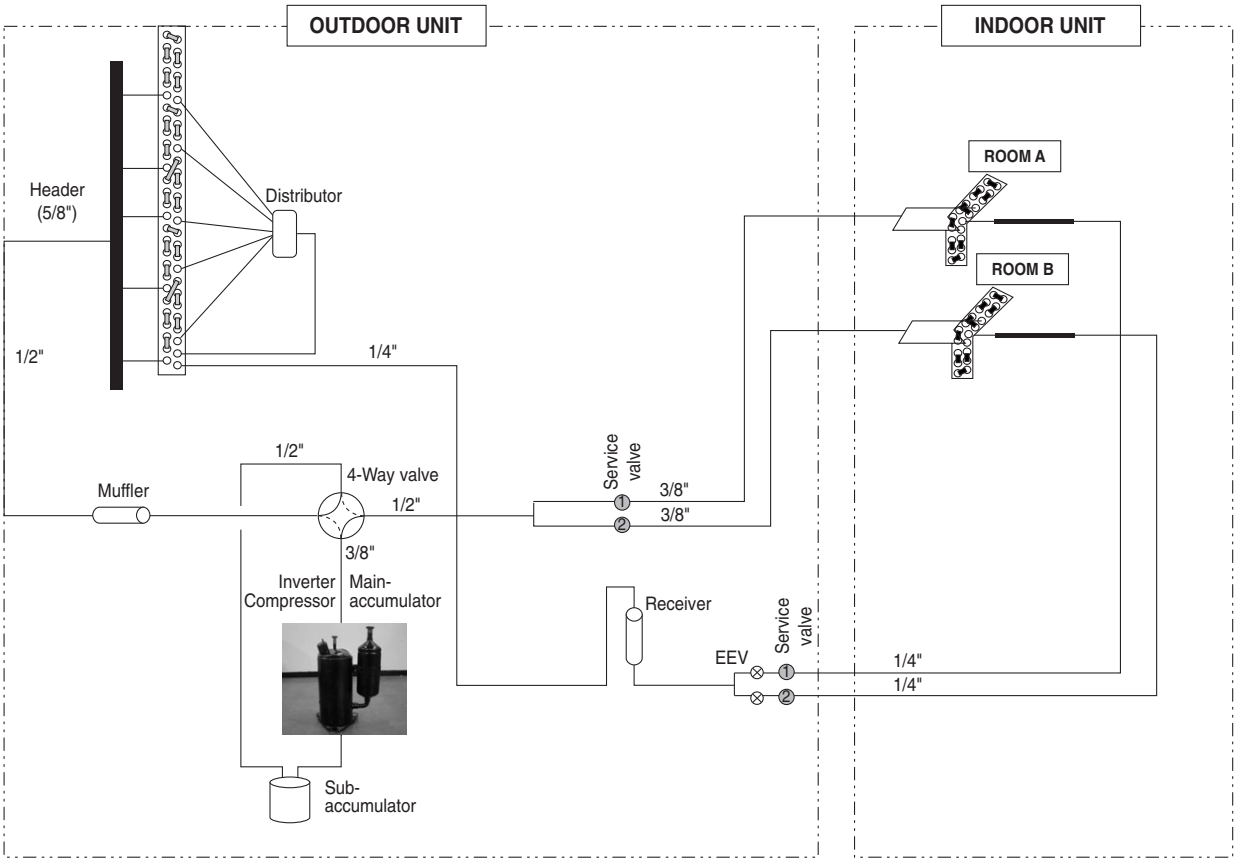
9-2 Refrigerating Cycle Diagram

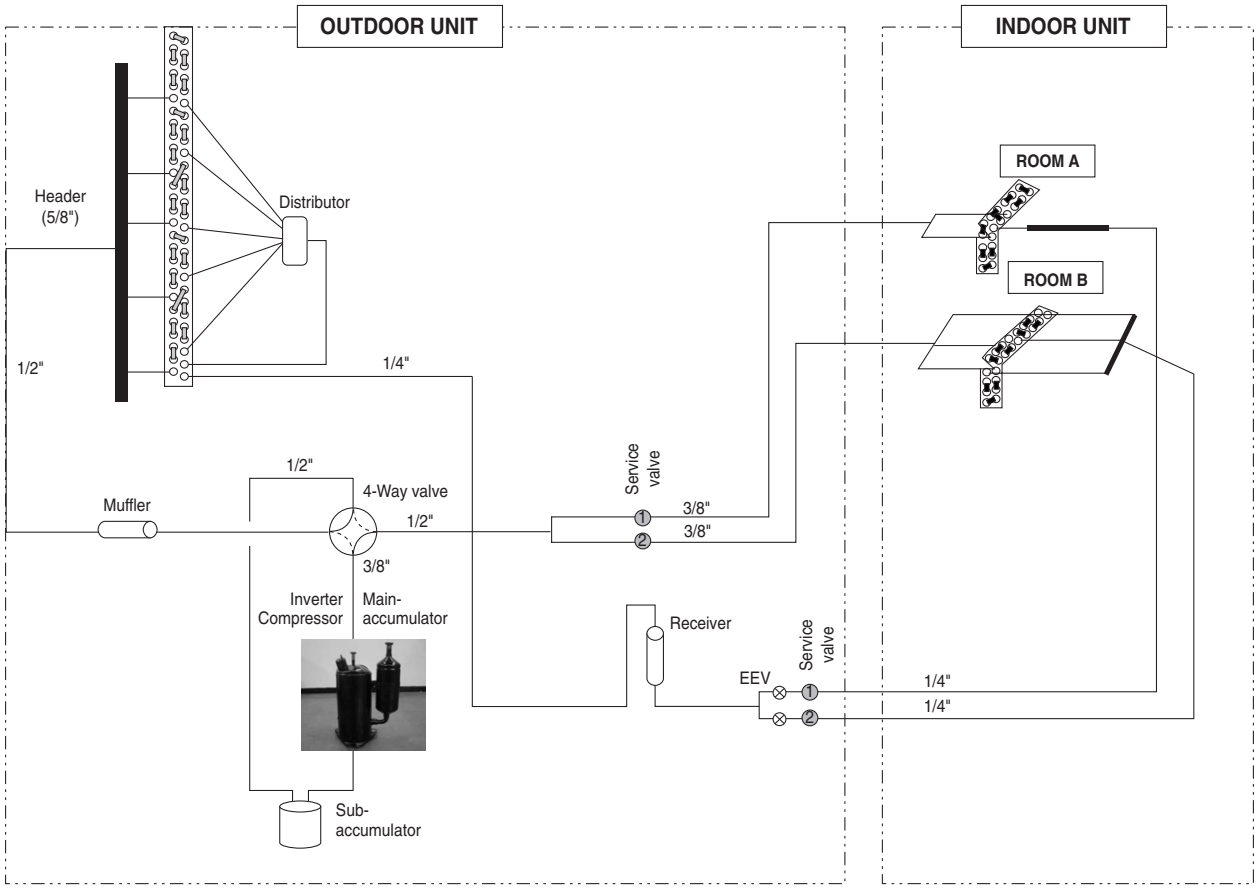
■ MH040FXEA2/MH052FXEA2/MH14VP2X/MH16VP2X/MH18VP2X/MH14VW2X/MH16VW2X/MH18VW2X

ex) 2 Rooms(MH026FPEA+MH026FPEA, MH✳✳✳✳✳-07+MH✳✳VP2-07, MH✳✳✳✳✳-07+MH✳✳✳✳✳-09, MH✳✳VP2-09+MH✳✳✳✳✳-09)



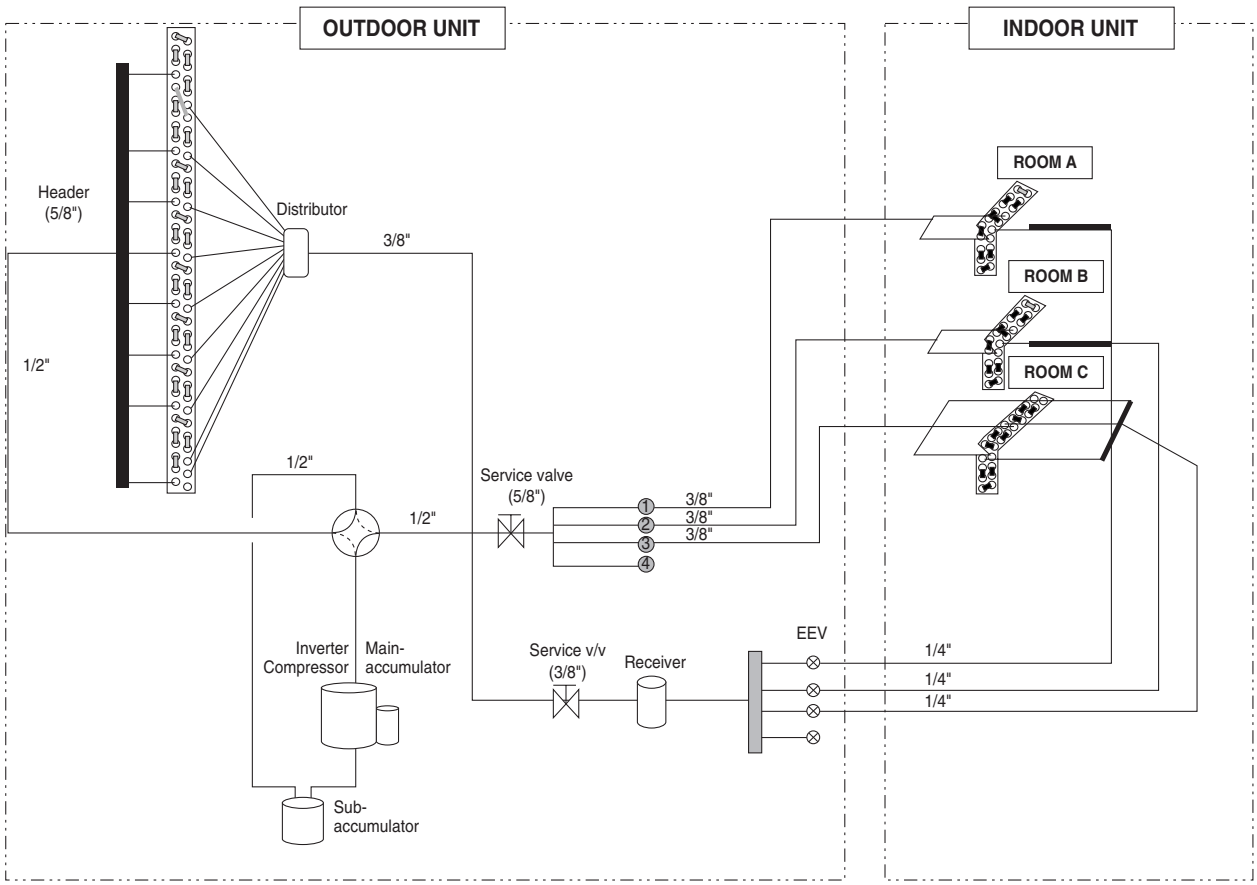
■ MH19VP2X/MH19VW2X

ex) 2 Rooms(MH✳✳✳✳✳-07+MH✳✳✳✳✳-12)



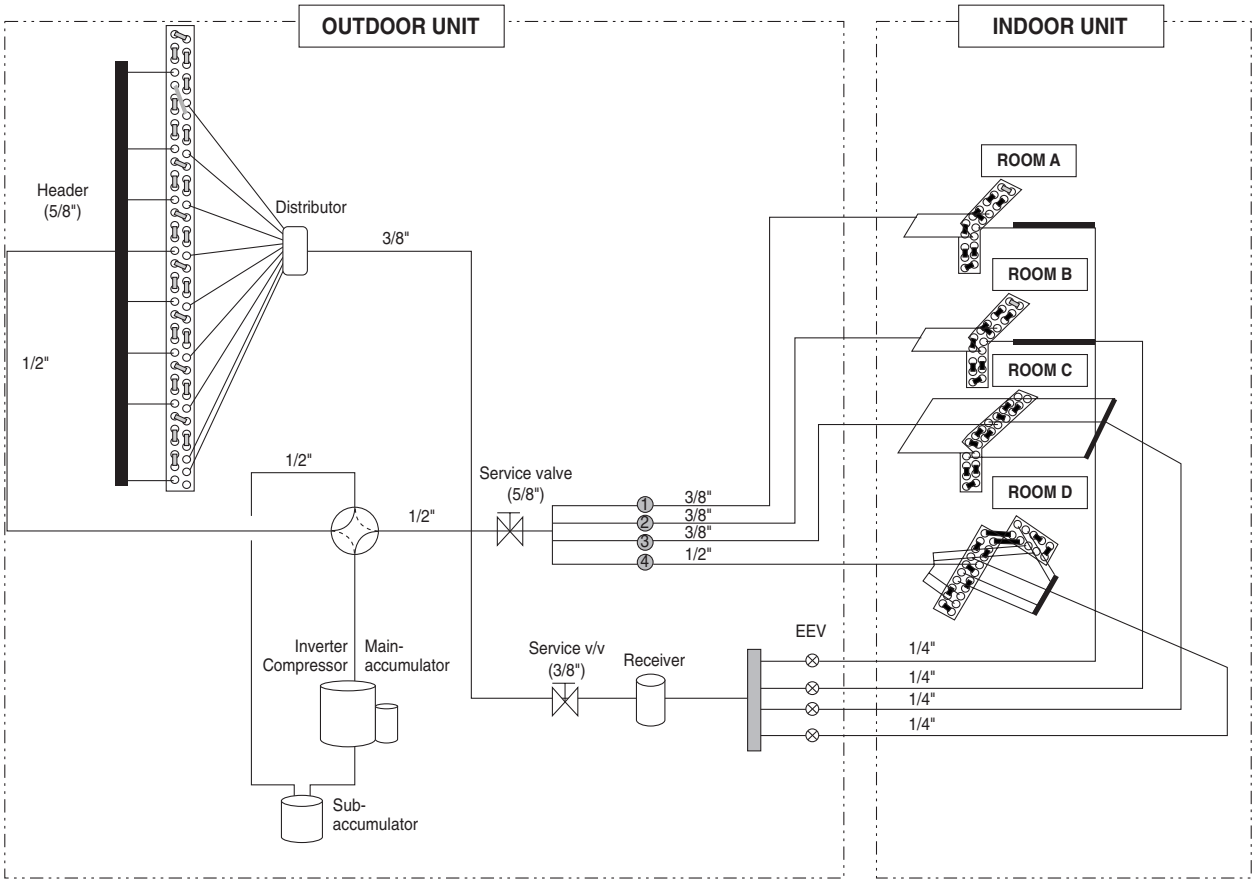
■ MH30VP2X/MH30VW2X

ex) 3 Rooms(MH30✳✳2-09+MH30✳✳2-09+MH30✳✳2-12)



■ MH068FXEA4/MH080FXEA4

ex) 4 Rooms(MH026FPEA+MH026FPEA+MH035FPEA+MH052FPEA✳)

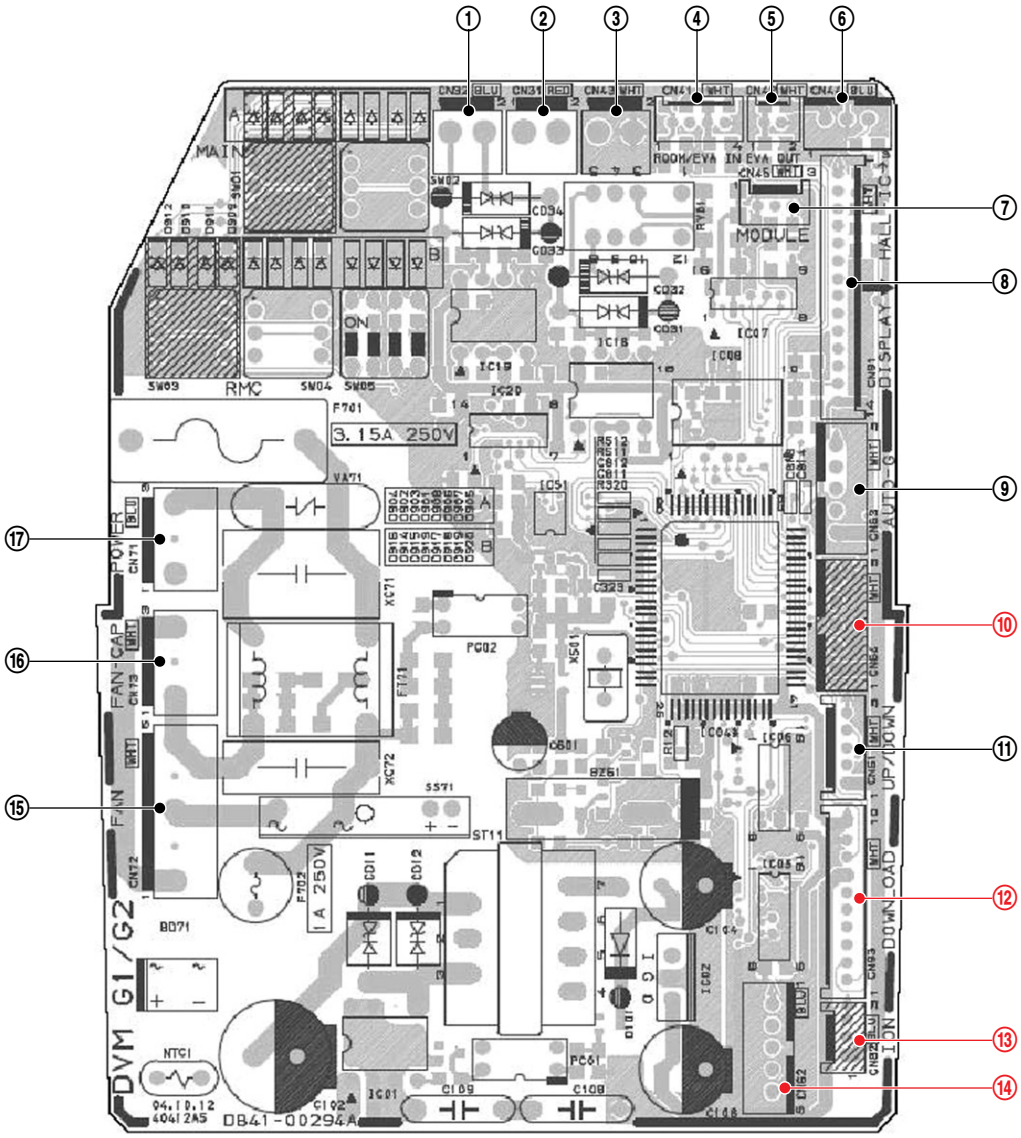


10. PCB Diagram

10-1 MAIN PCB(Indoor Unit)

■ MH✳✳✳FPEA✳/MH✳✳VP2-✳✳

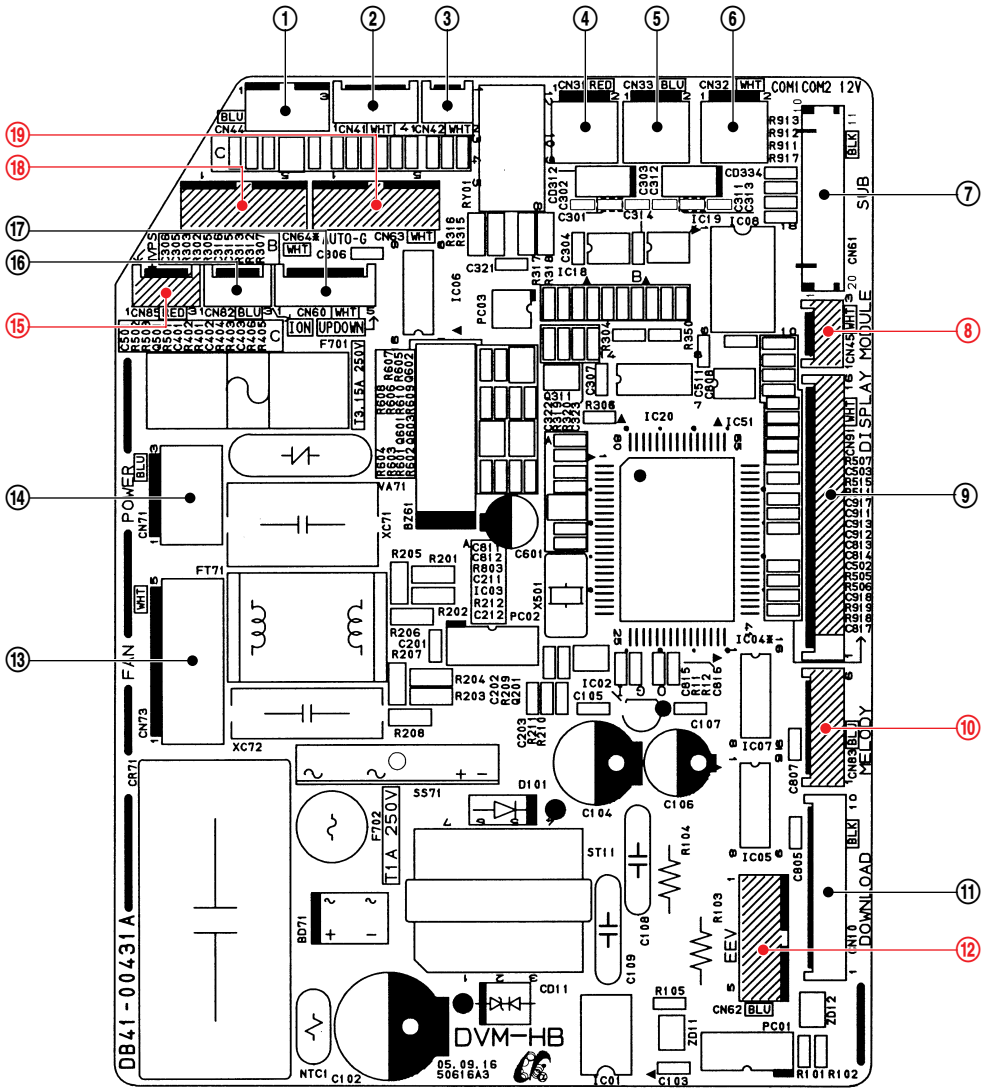
⚠ The red number connecter is not used.



①	COM2	⑩	Auto Grill 2
②	COM1	⑪	Blade-H Step Motor
③	12V	⑫	Down Load Connector
④	ROOM/EVE IN	⑬	ION
⑤	EVE OUT	⑭	EEV
⑥	Motor Rpm Feed-Back	⑮	Indoor Fan Motor
⑦	Module PCB Connection	⑯	Fan Motor Capacitor
⑧	Display PCB Connection	⑰	Power
⑨	Auto Grill		

■ MH✳✳✳FWEA/MH✳✳VW2-✳✳(MAIN PCB)

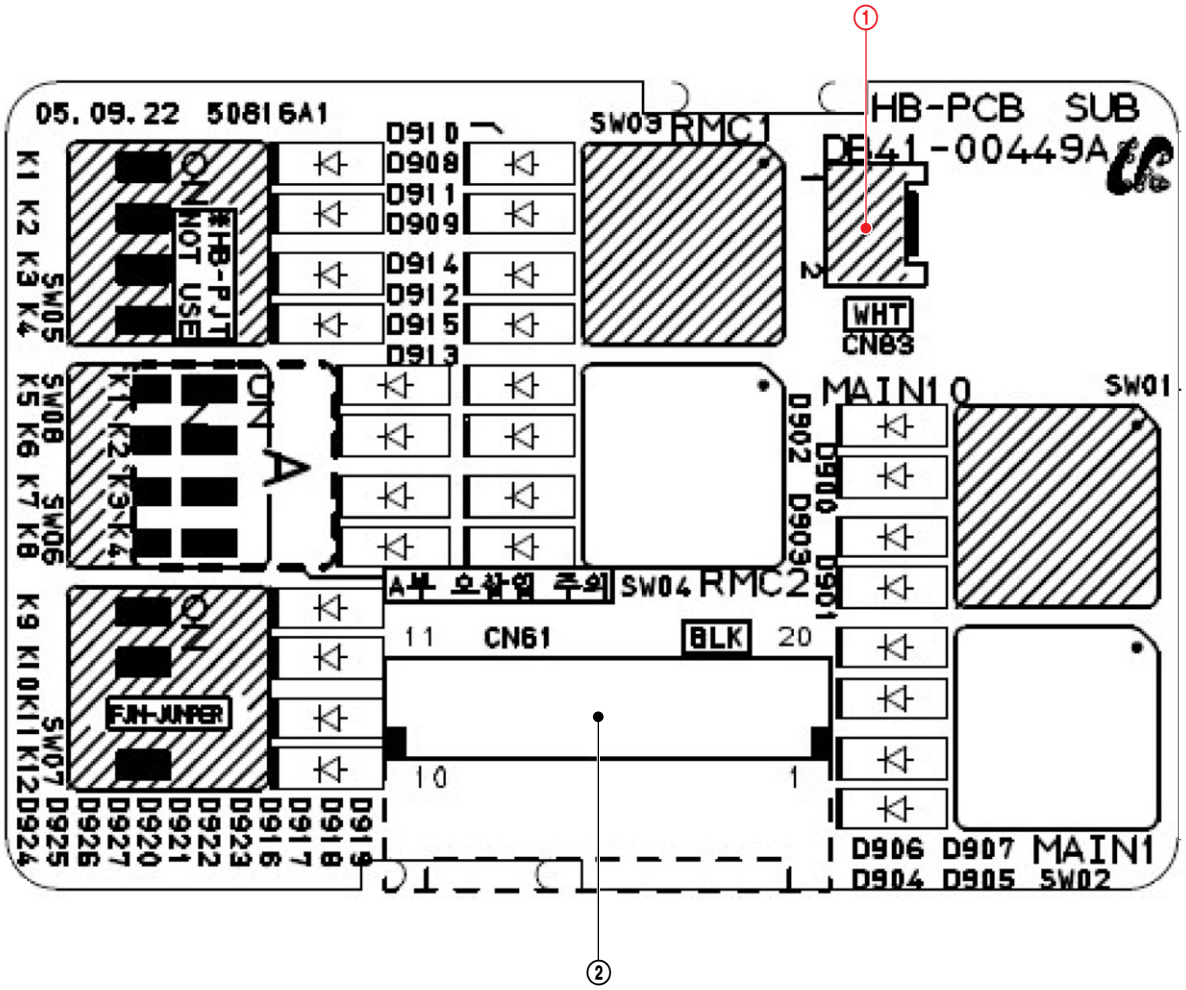
⚠ The red number connecter is not used.



①	Motor Rpm FeedBack	⑪	DownLoad Connector
②	ROOM/EVA IN	⑫	EEV
③	EVE OUT	⑬	Indoor Fan Motor
④	COM1	⑭	POWER
⑤	COM2	⑮	HVPS
⑥	12V	⑯	ION
⑦	SUB PCB Connection	⑰	Blade Step Motor
⑧	Module PCB Connection	⑱	Auto Grill Step Motor1
⑨	Display PCB Connection	⑲	Auto Grill Step Motor2
⑩	Melody		

■ MH✳✳✳FWEA/MH✳✳VW2-✳✳(SUB PCB)

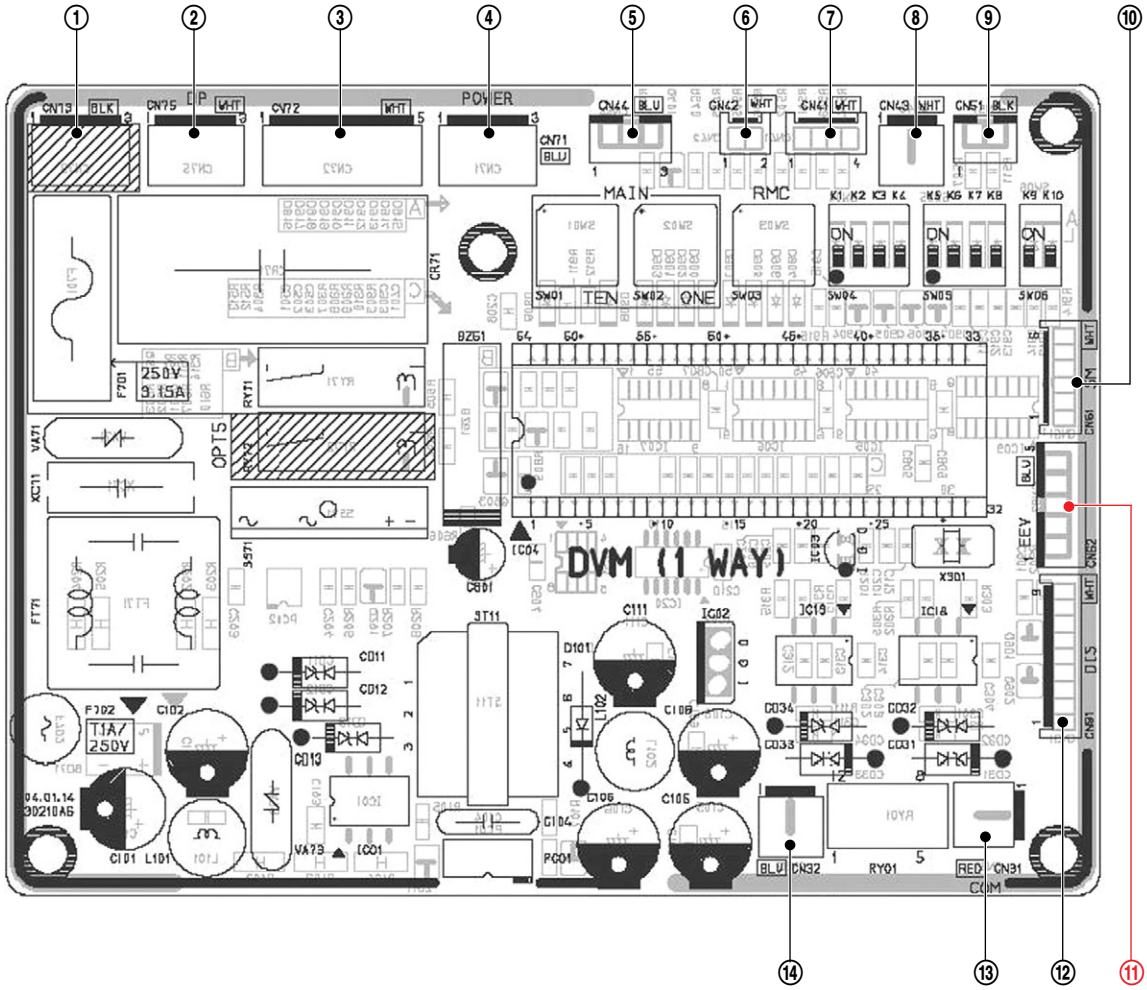
⚠ The red number connecter is not used.



①	External Signal
②	MAIN PCB Connection

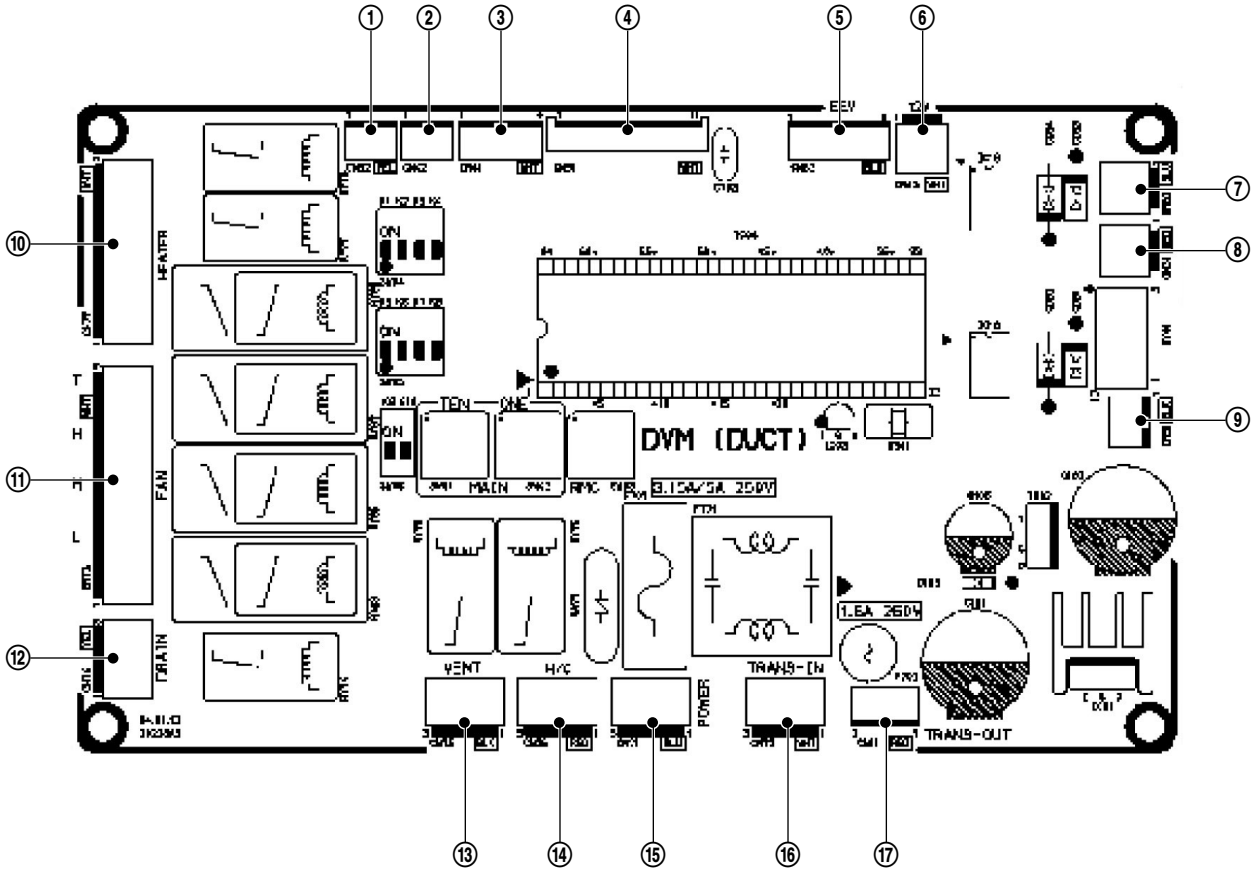
■ MH✳✳✳FKEA

⚠ The red number connecter is not used.



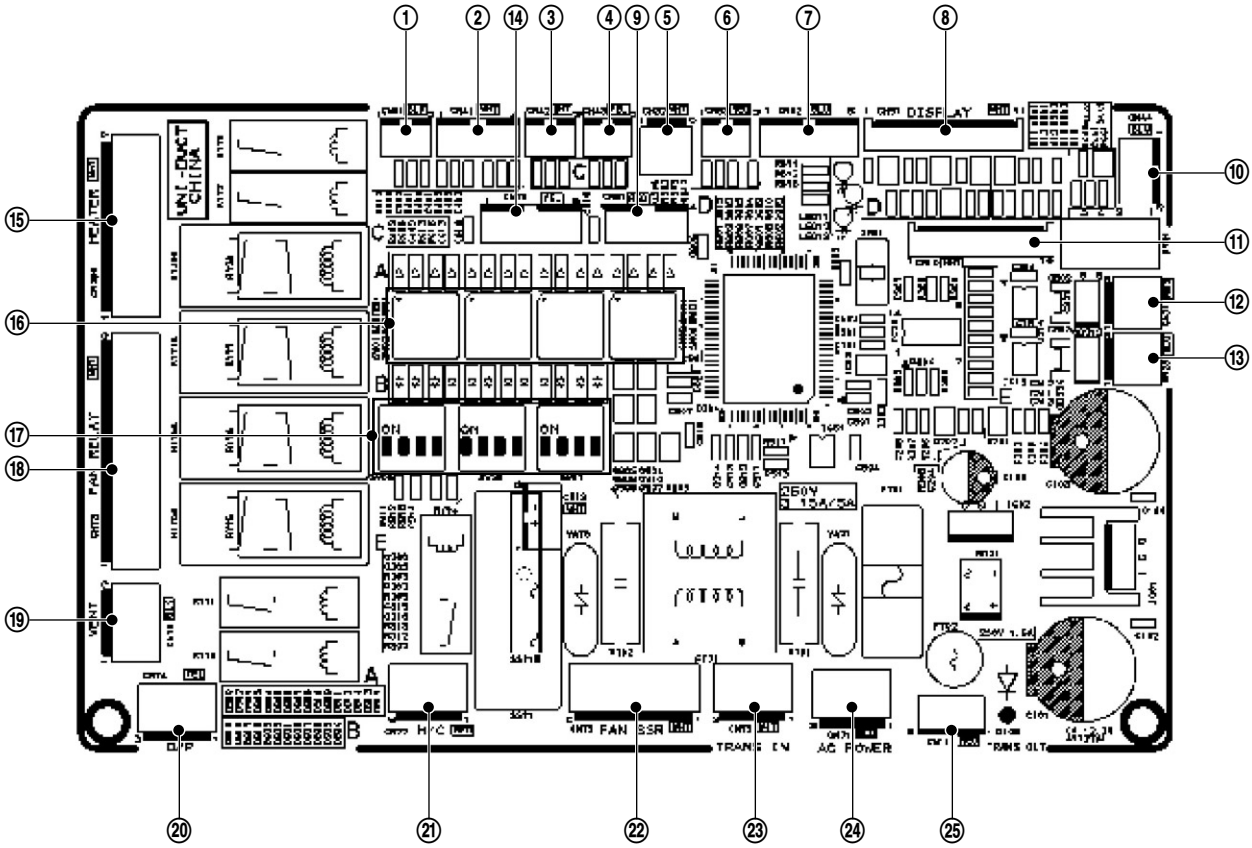
①	Ventilator	⑧	12V
②	Drain Pump	⑨	Float Switch Connection
③	Fan-Motor	⑩	Step Motor
④	Power	⑪	EEV Connection
⑤	Motor Rpm Feed-Back	⑫	Display PCB Connection
⑥	EVA Out Sensor	⑬	COM1
⑦	ROOM/EVA IN Sensor	⑭	COM2

■ MH✳✳✳FDEA



①	Heat-Thermal	⑨	Float Switch
②	EVA out Temperature	⑩	Heater
③	Room Temperature	⑪	Fan Motor
	EVA in Temperature	⑫	Drain Pump
④	Display	⑬	Ventilator
⑤	EEV	⑭	Water Coil
⑥	12V Power	⑮	Power
⑦	COM 2	⑯	Trans in
⑧	COM 1	⑰	Trans out

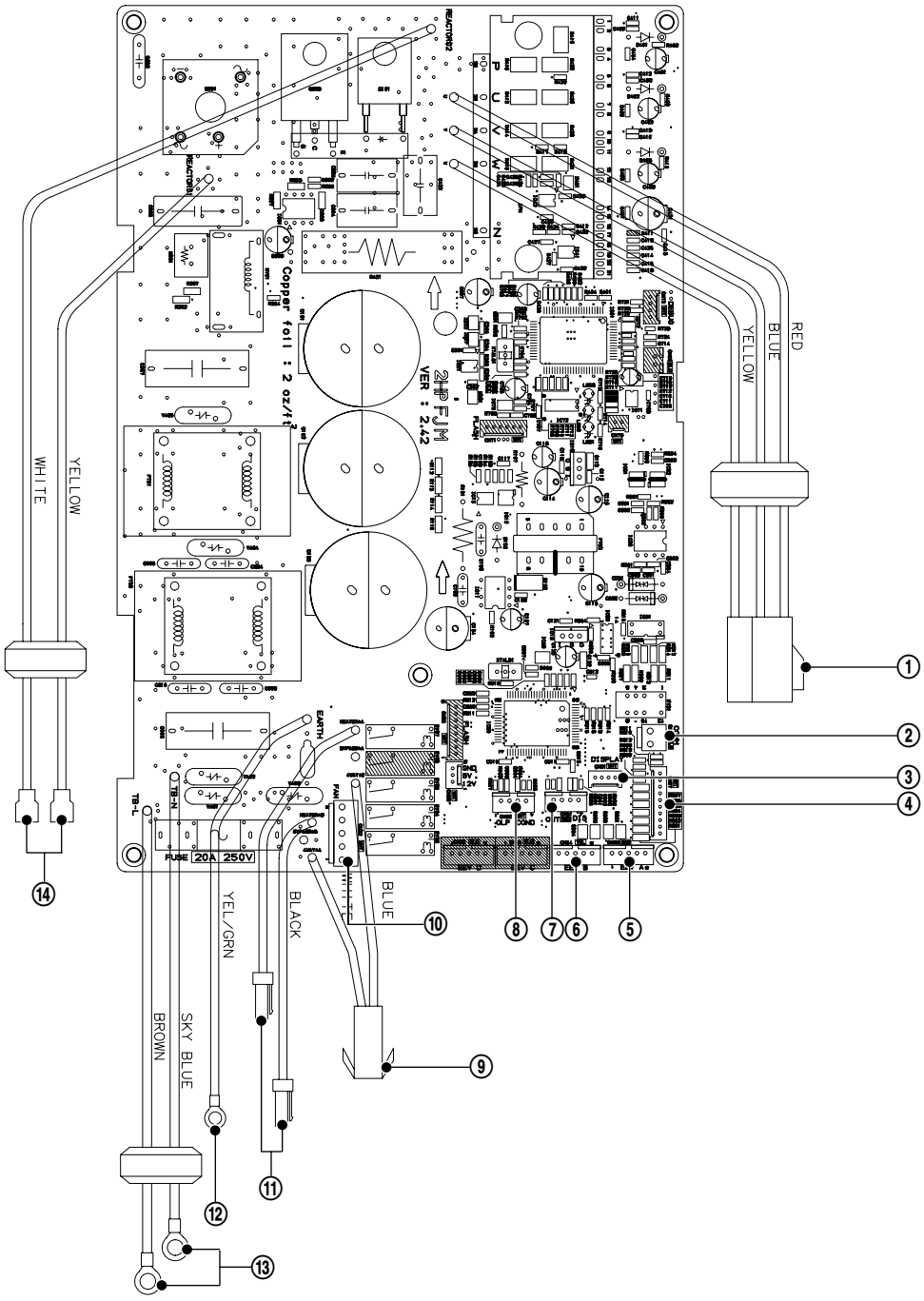
■ MH✳✳✳FEEA



①	Float Switch	⑬	COM 2
②	Room Temperature	⑭	Load Control Signal
	EVA in Temperature	⑮	Heater
③	EVA out Temperature	⑯	Address Switch
④	Heater Temperature	⑰	Option Switch
⑤	Wired Remote Controller Power(12V)	⑱	Fan (Tap Control)
⑥	Control Signal	⑲	Ventilator
⑦	EEV	⑳	Drain Pump
⑧	Display	㉑	Hot Coil
⑨	Operating Check Signal	㉒	Fan (SSR)
⑩	HALL IC	㉓	Trans In
⑪	Download	㉔	Main Power
⑫	COM 1	㉕	Trans out

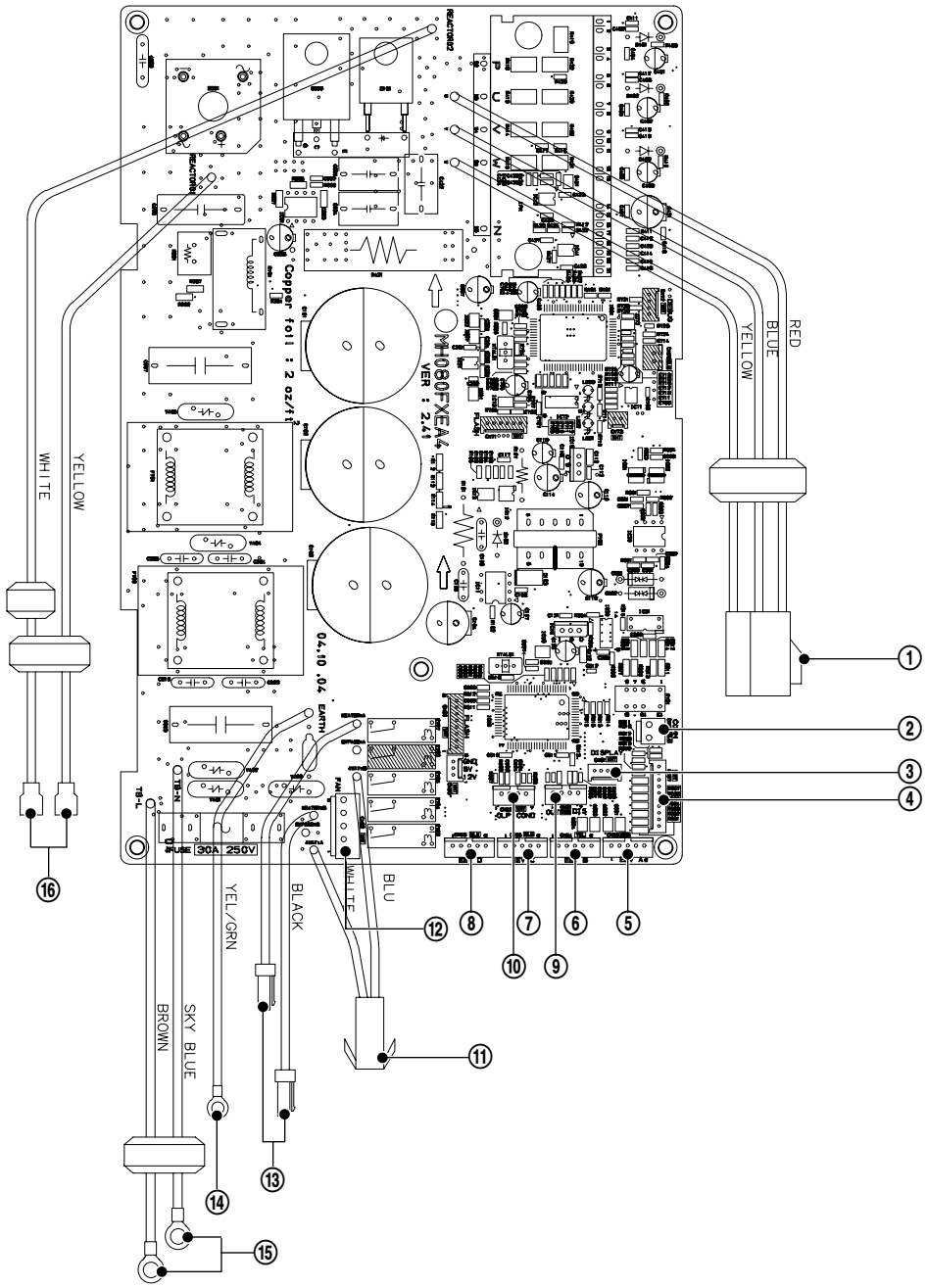
10-2 MAIN PCB(Outdoor Unit)

■ **MH040FXEA2/MH052FXEA2/MH14VP2X/MH16VP2X/MH18VP2X/MH19VP2X/MH14VW2X/MH16VW2X/MH18VW2X/MH19VW2X**



①	Compressor C/W	⑧	Thermistor-O.L.P Condenser
②	Communication	⑨	4-Way C/W
③	Display 4P	⑩	Fan
④	Display 10P	⑪	Heater C/W
⑤	EEV A	⑫	Earth C/W
⑥	EEV B	⑬	Power C/W
⑦	Thermistor-Out/Discharge	⑭	Reactor C/W

■ MH068FXEA4/MH080FXEA4/MH30VP2X/MH30VW2X



①	Compressor C/W	⑨	Thermistor-Out/Discharge
②	Communication	⑩	Thermistor-O.L.P Condenser
③	Display 4P	⑪	4-Way C/W
④	Display 10P	⑫	Fan
⑤	EEV A	⑬	Heater C/W
⑥	EEV B	⑭	Earth C/W
⑦	EEV C	⑮	Power C/W
⑧	EEV D	⑯	Reactor C/W

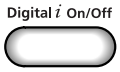
11. Operating Instructions

11-1 MH✳✳✳FPEA✳/MH✳✳VP2-✳✳

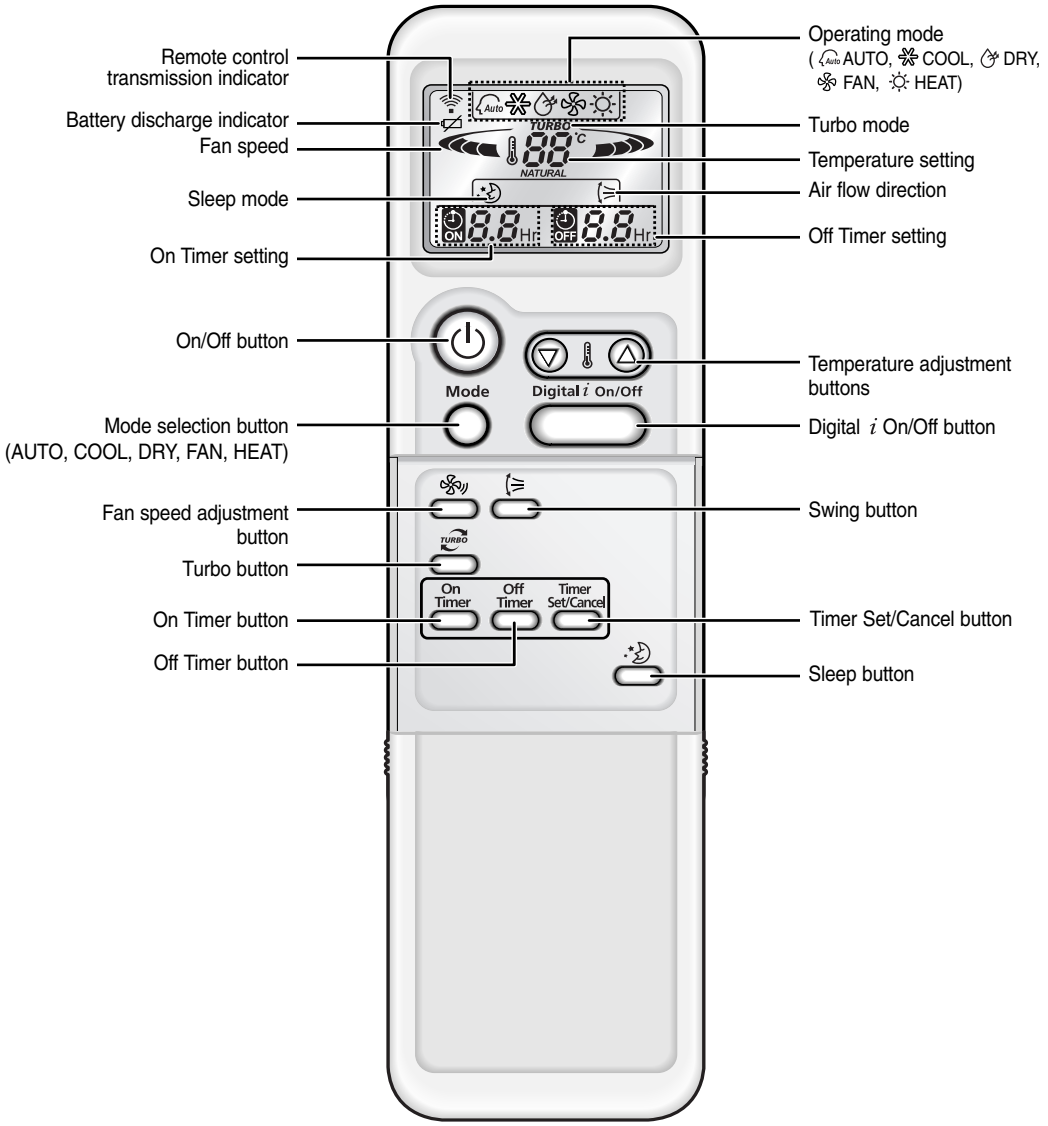
11-1-1 The Feature of Key in remote control

No	BUTTON	FUNCTION
1	(On/Off)	On/Off button. Press the button to stop or run the air conditioner.
2	(UP)	Temperature adjustment button(UP). The temperature is increased by the pressing the temperature button.
	(DOWN)	Temperature adjustment button(DOWN). The temperature is decreased by the pressing the temperature button.
3	Mode	Mode selection button. Each time you press this button, mode is changed in the following order. Auto → ❄ → 💧 → 🌀 → ☀ Auto : Auto Mode 🌀 : Fan Mode ❄ : Cool Mode ☀ : Heat Mode 💧 : Dry Mode
4		Fan speed adjustment button. Each time you press this button, FAN SPEED is changed in the following order. Low → Medium → High Automatic(rotated : → → →)
5		Swing button. It adjusts the airflow to upward and downward.
6	TURBO	Turbo button. The air conditioner cools or heats the room as quickly as possible. After 30 minutes, the air conditioner is reset automatically to the previous mode.
7		Sleep button. The sleep timer can be used when you are cooling or heating your room to switch the air conditioner off automatically after a period of 6 hours.
8	On Timer	On Timer button. The On Timer enables you to **switch on** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To set the operating time, press the On Timer button one or more times until the required time display.

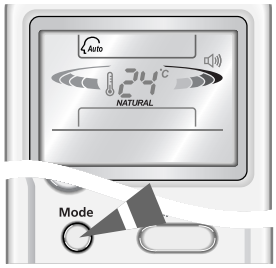
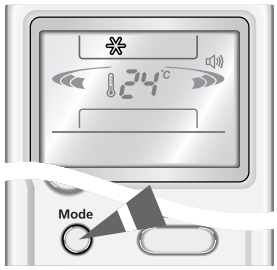
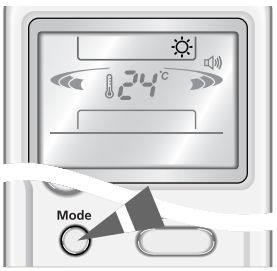
The Feature of Key in remote control(cont.)

No	BUTTON	FUNCTION
9		Off Timer button. The Off Timer enables you to **switch off** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To set the operating time, press the Off Timer button one or more times until the required time display.
10		Timer Set/Cancel button. After setting On Timer or Off Timer, press the Timer Set/Cancel button to set it completely. And press the Timer Set/Cancel button again to cancel On Timer or Off Timer set.
11		Digital *i* On/Off button. If you want to turn off the display during operation press the Digital *i* On/Off button.

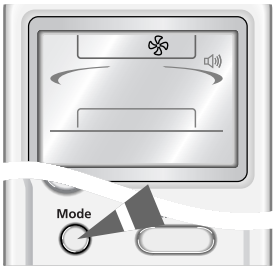
11-1-2 Wireless Remote Control-Buttons and Display



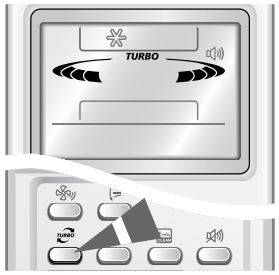
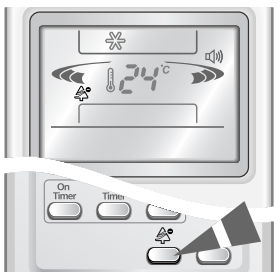
11-2-1 Basic Function

Mode	Explanation	Remark
Auto Mode	Press the Mode button on the remote control until Auto is displayed.	
Cool Mode	Press the Mode button on the remote control until ❄ is displayed.	
	Press the button to select the fan speed until the required setting is displayed. Automatic (rotated : → → → →) Low Medium High	
Heat Mode	Press the Mode button on the remote control until ☼ is displayed.	
	Press the button to select the fan speed until the required setting is displayed. Automatic (rotated : → → → →) Low Medium High	

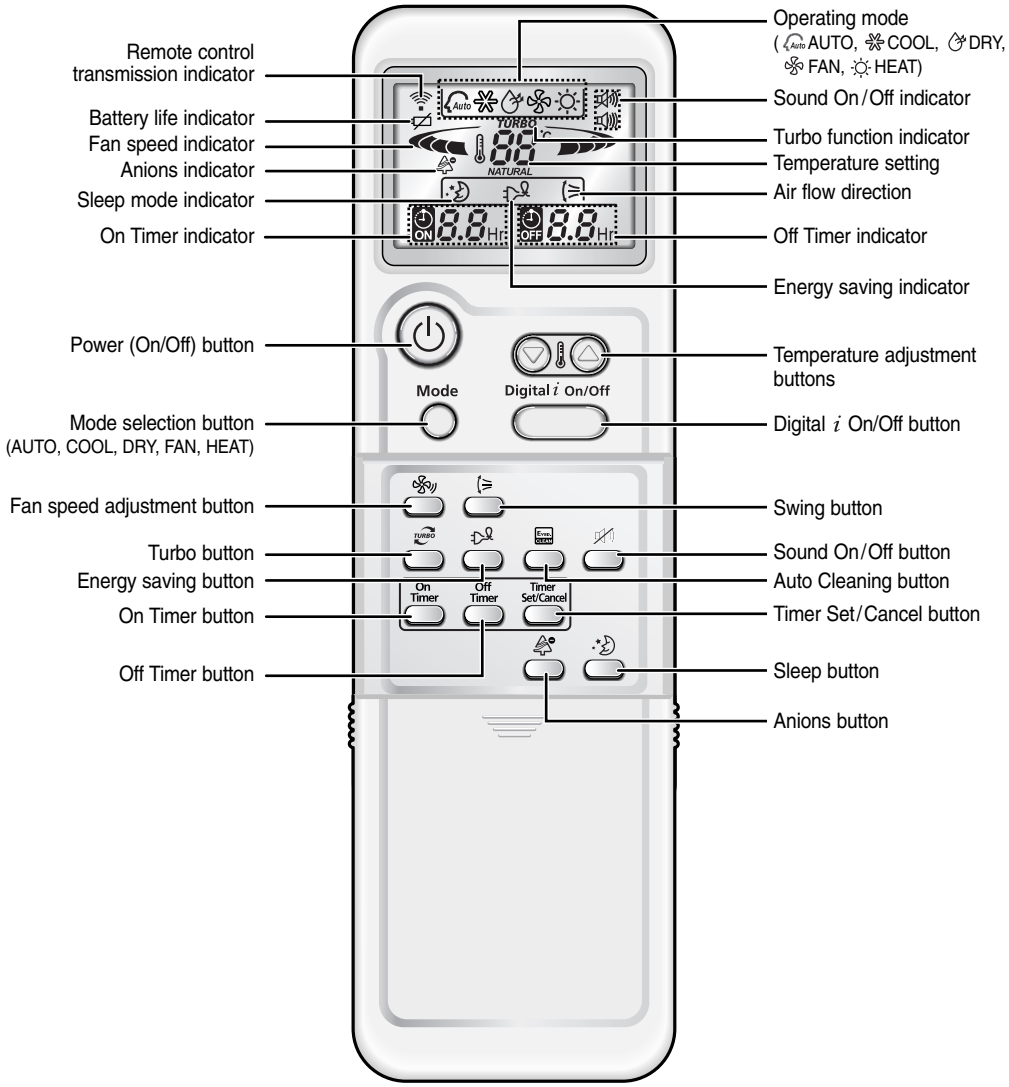
Basic Function(cont.)

Mode	Explanation	Remark
Dry Mode	Press the Mode button on the remote control until is displayed.	
Fan Mode	Press the Mode button on the remote control until is displayed.	

11-2-2 Applied Function

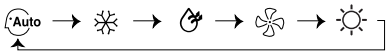
<table>
<tr><th>Mode</th><th>Explanation</th><th>Remark</th></tr>
<tr><td>Turbo Function</td><td>Press the button.
• After 30 minutes, the air conditioner is reset automatically to the previous setting.
• You can select the Turbo function in the Auto, Cool and Heat mode. If you select this function in the Dry or Fan mode, the mode changes to the Auto mode.</td><td> 
</td></tr>
<tr><td>Energy Saving Function</td><td>Press the button.</td><td>
</td></tr>
<tr><td>Auto Cleaning Function</td><td>Press the button.
<table>
<tr><th>When the air conditioner is turned</th><th>Mode</th><th>Operating time</th></tr>
<tr><td rowspan="2">On</td><td>Auto, Cool, Dry</td><td>30 minutes</td></tr>
<tr><td>Heat, Fan</td><td>15 minutes</td></tr>
<tr><td>Off</td><td></td><td>30 minutes</td></tr>
</table>
✳ There is no extra mark on the remote control, LED is on at the main body display. Press the button one more time for cancel.</td><td>
</td></tr>
<tr><td>Sound On/Off Function</td><td>Press the button to turn off the sound.</td><td>
</td></tr>
<tr><td>Anions Function</td><td>Press the button.
• If you press the button when the air conditioner is off, the air conditioner turns on automatically and generates anions in the Fan mode with Low fan speed.</td><td> 
</td></tr>
</table>

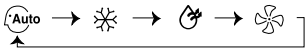
11-2-3 Wireless Remote Control-Buttons and Display

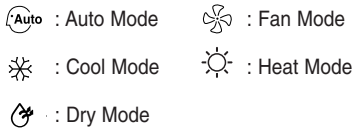


11-3 MH✳✳✳FKEA/MH✳✳✳FDEA/MH✳✳✳FEEA

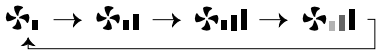
11-3-1 The Feature of Key in remote control



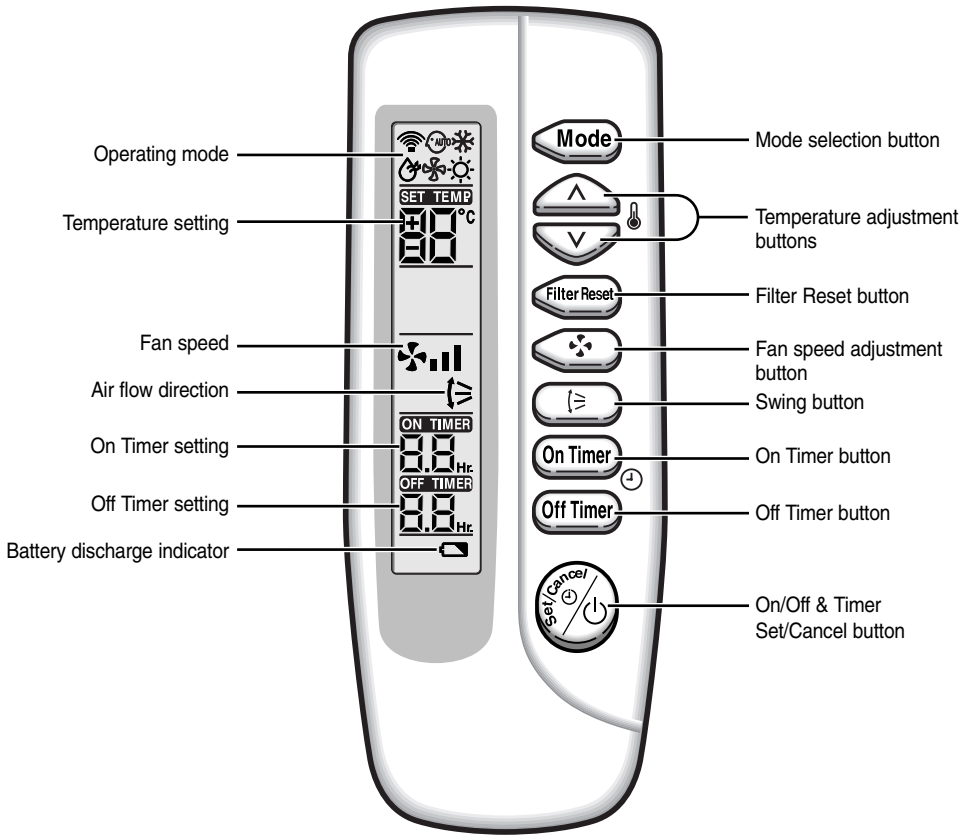




No	BUTTON	FUNCTION
1	Set/Cancel	On/Off & Timer Set/Cancel button. Press the button to stop and run the air conditioner or set up On/Off timer.
2	Mode	Mode selection button. Each time you press this button, mode is changed in the following order. ▶ **In case of Heat pump model** Auto → ❄ → Dry → Fan → ☼ ▶ **In case of Cooling only model** Auto → ❄ → Dry → Fan Auto : Auto Mode ❄ : Cool Mode Dry : Dry Mode Fan : Fan Mode ☼ : Heat Mode
3	∧ (UP)	Temp. adjustment button(UP). The temperature is increase by the pressing the temperature button.
	∨ (DOWN)	Temp. adjustment button(DOWN). The temperature is decrease by the pressing the temperature button.
4	Filter Reset	Filter Reset button. When the filter lamp is on the indoor DISPLAY part, replace the filter and press the reset button.
5		Fan speed adjustment button. Each time you press this button, FAN SPEED is changed in the following order. → → →
6		Swing button. It adjusts the airflow to upward and downward.
7	On Timer	On Timer button. The On Timer enables you to **switch on** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To cancel, press the (Set/Cancel) button.
8	Off Timer	Off Timer button. The Off Timer enables you to **switch off** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To cancel, press the (Set/Cancel) button.



11-3-2 Wireless Remote Control-Buttons and Display



Note : • After cleaning the air filter, press the Filter Reset button.

12. Troubleshooting

12-1 Items to be checked first

1. The input voltage should be rating voltage ±10% range.
   The air conditioner may not operate properly if the voltage is out of this range.

2. Is the link cable linking the indoor unit and the outdoor unit linked properly?
   The indoor unit and the outdoor unit shall be linked by 4 wires.
   2 wires are for power and other 2 wires are for communication, total 4 wires on each indoor unit. Check the terminals if the indoor unit and outdoor unit are properly linked by the same number of cables and if connecting position on the terminal is correct. Otherwise the air conditioner may not operate properly.

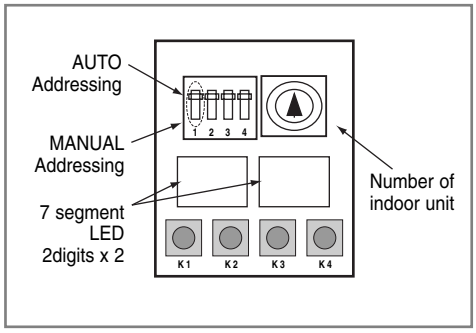
3. When a problem occurs due to the contents illustrated in the table below it is a symptom not related to the malfunction of the air conditioner.

No	Operation of air conditioner	Explanation
1	In a COOL operation mode, the compressor does not operate at a room temperature higher than the setting temperature that the INDOOR FAN should operate. In a HEAT operation mode, the compressor does not operate at a room temperature lower than the setting temperature that indoor fan should operate.	In happens after a delay of 3 minutes when the compressor is reoperated. The same phenomenon occurs when a power is on. As a phenomenon that the compressor is reoperated after a delay of 3 minutes, the indoor fan is adjusted automatically with reference to a temperature of the air blew
2	Fan speed setting is not allowed in AUTO(Auto) or DRY( ) mode.	The speed of the indoor fan is set to LL in DRY mode. Fan speed is 5 steps and is selected automatically in AUTO mode.
3	Compressor stops operation intermittently in DRY( ) mode.	Compressor operation is controlled automatically in DRY mode depending on the room temperature and humidity.
4	Compressor of the outdoor unit is operating although it is turned off in a HEAT mode.	When the unit is turned off while de-ice is activated, the compressor continues operation for up to 12 minutes (maximum) until the deice is completed.
5	Timer LED( ) only of the indoor unit lights up and the air conditioner does not operate.	Timer is being activated and the unit is in ready mode. The unit operates normally if the timer operation is cancelled.
6	The compressor and indoor fan stop intermittently in HEAT mode.	The compressor and indoor fan stop intermittently if room temperature exceeds a setting temperature in order to protect the compressor from overheated air in a HEAT mode.
7	Indoor fan and outdoor fan stop operation intermittently in a HEAT mode.	The compressor operates in a reverse cycle to remove exterior ice in a HEAT mode, and indoor fan and outdoor fan do not operate intermittently for within 20% of the total heater operation.
8	The compressor stops intermittently in a COOL mode or DRY mode, and fan speed of the indoor unit decreases.	The compressor stops intermittently or the fan speed of the indoor unit decreases to prevent inside/outside air frozen depending on the inside/outside air temperature.

12-2 Checking and Testing operations

To complete the installation, perform the following checks and tests to ensure that the air conditioner is operating correctly.

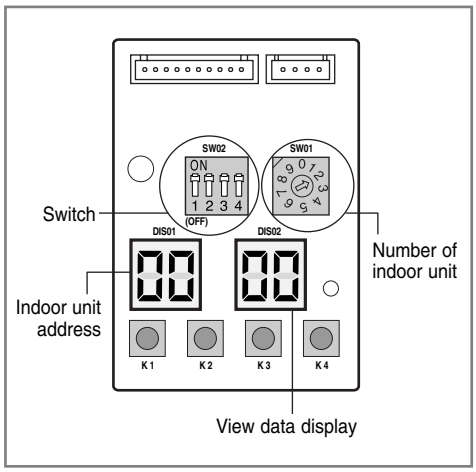
1. Review all the following elements in the installation:
   - Installation site strength
   - Piping connection tightness not to leak any gas
   - Connection wiring
   - Heat-resistant insulation of the piping
   - Drainage
   - Earthing wire connection
   - Setting number of the indoor unit installed (Outdoor unit SW)
   - Addressing mode (AUTO or MANUAL)
   - Address number on each indoor unit (Manual addressing mode)
   - Correct operation for checking connection (follow the step below)



■ **Key Options of PCB Display**

- K1 : Test button - K2 : Function button
- K3 : Reset button - K4 : View mode change button

Key / Push	K1	K2	K3	K4
1	Heat mode Try-run (Display: H1)	Refrigerant Charging (Display: H2)	Reset	View mode change
2	-	Cool mode Try-run (Display: H3)		
3	-	Pump down (Display: H4)		
4	-	Checking of pipe connection (Display: H5)		

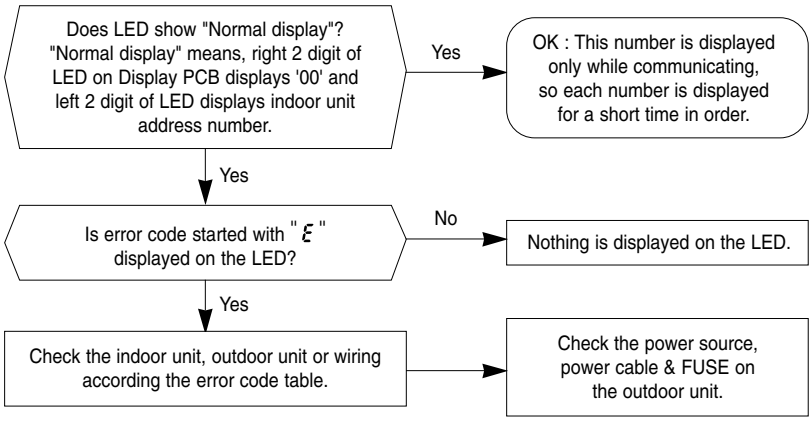


Outdoor PCB Display

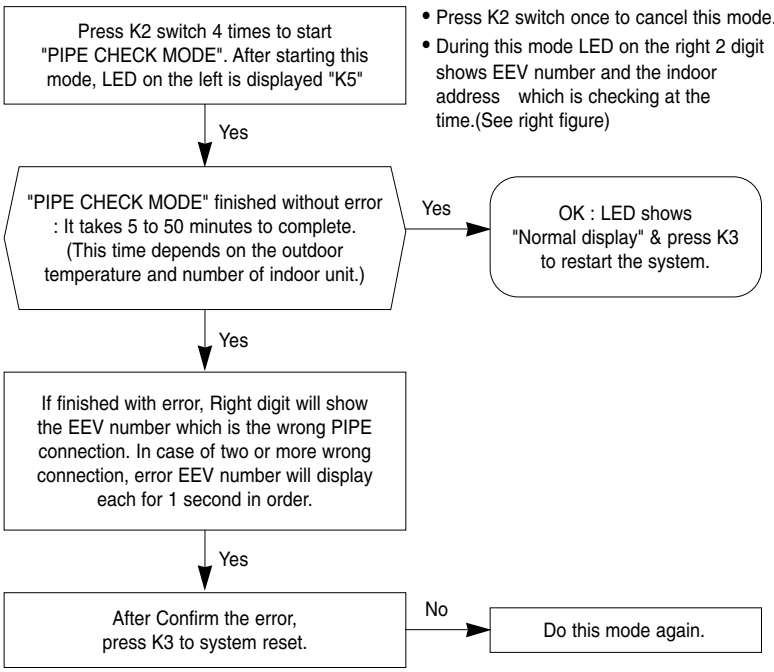
■ **K4 View mode Display changes**

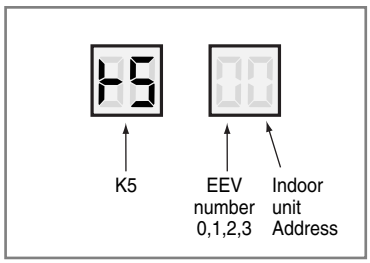
Push	Display Explanation		Push	Display Explanation
0	Present Compressor Frequency		7	Fan RPM (H: high, L: low, Blank: off)
1	Target Compressor Frequency		8	Discharge temperature
2	Order Compressor Frequency		9	OLP temperature
3	EEV0 current step		10	Condenser temperature
4	EEV1 current step		11	Outdoor temperature
5	EEV2 current step	MH040FXEA2/MH052FXEA2/MH14**2X/ MH16**2X/MH18**2X/MH19**2X Always Zero	12	Primary current
			13	Target Discharge temperature
6	EEV3 current step		14	Total capacity of the indoor units
			15	Safety control code

2. Apply the power to the outdoor unit.
   Outdoor unit will try to communicate the specified number of indoor units by SW01 on outdoor display PCB.

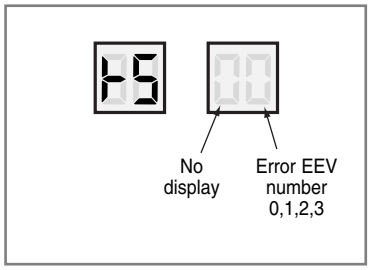


■ **In case of AUTO ADDRESSING mode (SW2-1:ON)**





LED display under PIPE CHECK MODE



LED display when PIPE CHECK ERROR

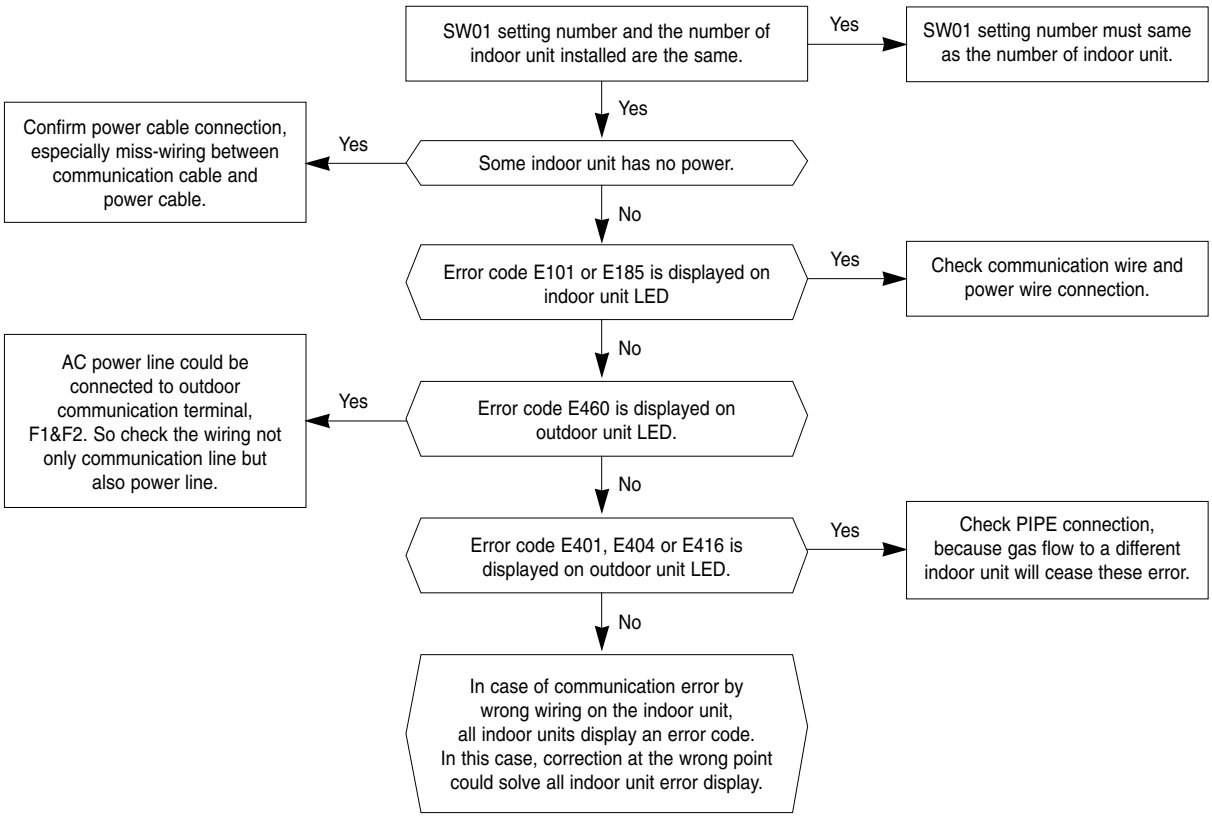
- This mode is for finding the combination between indoor unit and each valve on the outdoor unit. Because refrigerant flow is controlled with EEV in the outdoor, controller should know which EEV will control which indoor unit.
- Once "PIPE CHECK MODE" is done normally, each indoor unit will remember the given address number by the outdoor unit and no need to do this checking. But in case of listed below, PIPE CHECK MODE should be done again.
  - Re-install the system (ie.house moving)
  - Remove indoor unit, Add new indoor unit, Change indoor PCB for repair.
  - Mode change from "manual addressing" to "auto addressing"
- On this mode the controller will ignore the manual address number set on the rotary switch on the indoor PCB.
- To confirm the indoor address number assigned by this mode, use "TEST MODE" and the address number will be displayed on the LED display on the indoor unit.

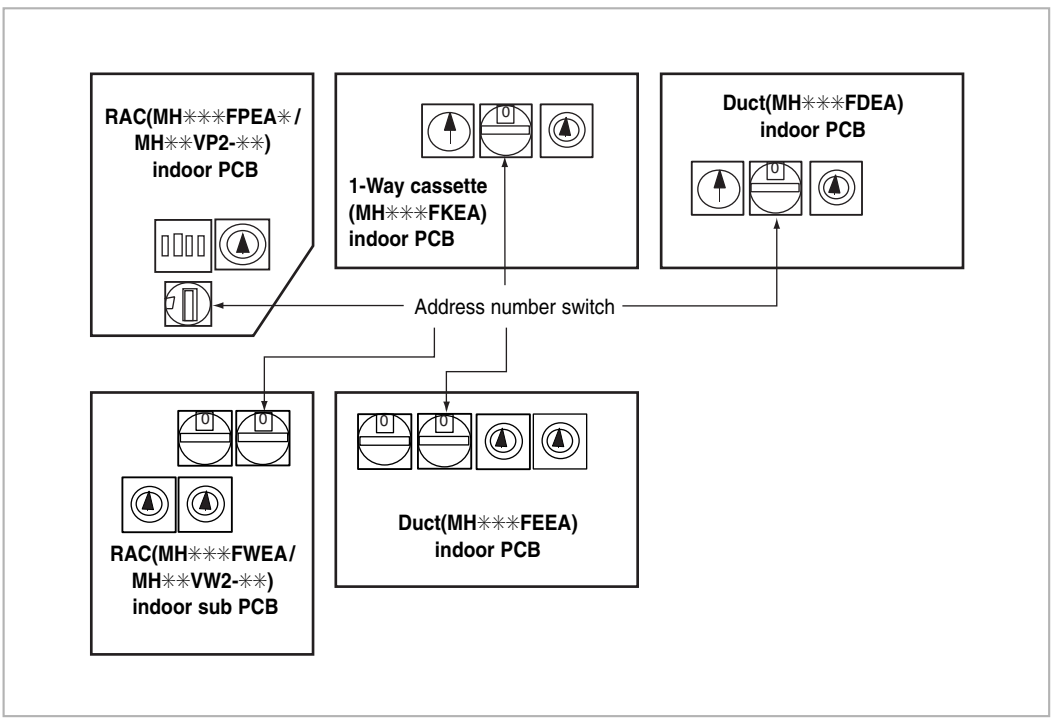
■ **In case of MANUAL ADDRESSING mode. (SW02-1:OFF)**

Checking the address number correctly on each indoor unit PCB.

- "PIPE CHECK MODE" is also able to use.

● **If Error code is displayed on indoor or outdoor LED, check as follows;**

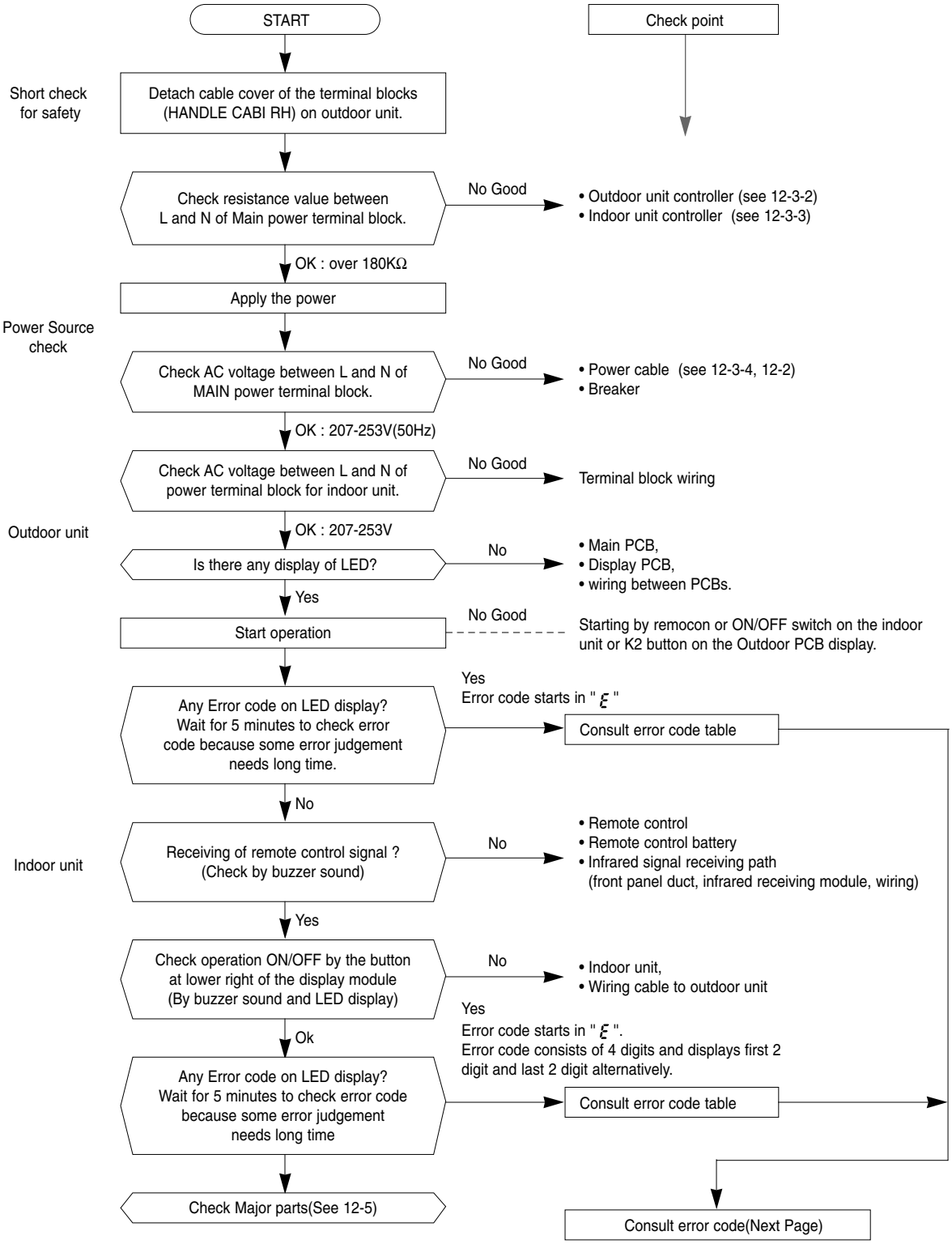




12-3 Fault Diagnosis by Symptom

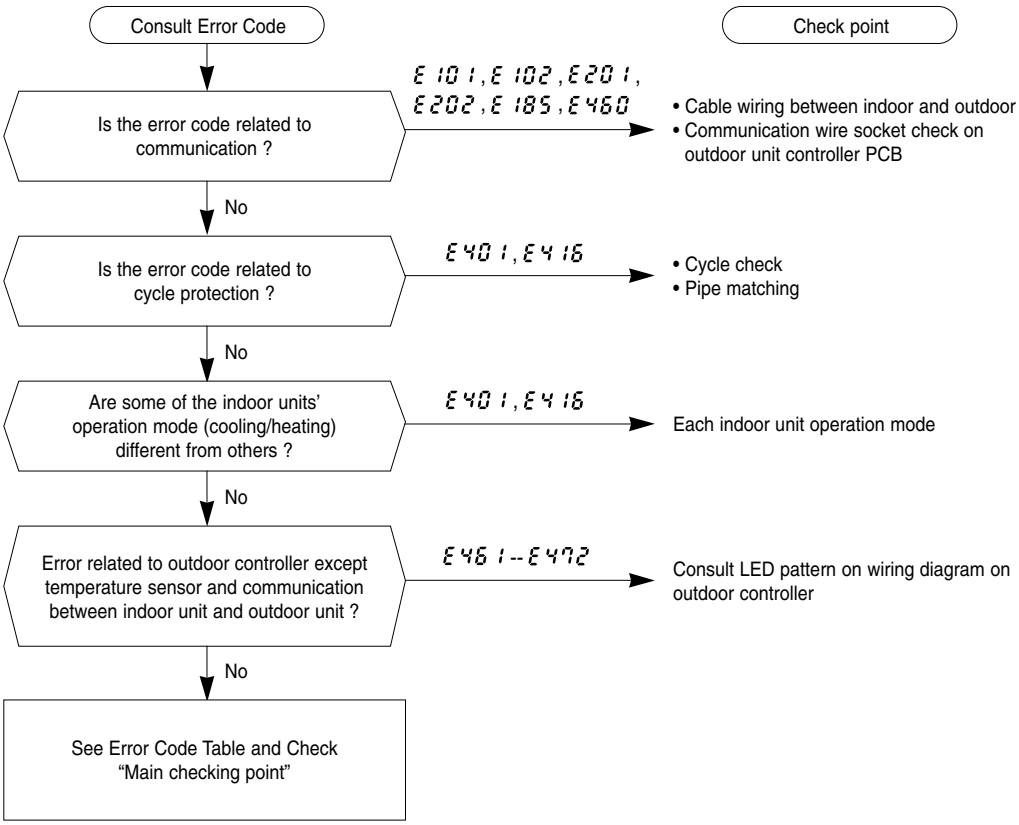
12-3-1 Basic Check Flow

Preparation : multimeter (AC voltage, DC voltage, Resistance)



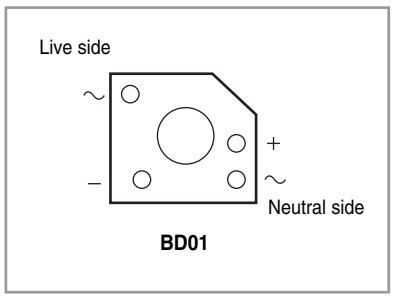
Basic Check Flow(cont.)

Preparation : multimeter (AC voltage, DC voltage, Resistance)



12-3-2 Checking Outdoor Controller

1. Making sure the wire connections.



2. Checking AC line
   1) Checking FUSE
   2) Checking resistance between 'L wire (BRN)' and 'DB01 Live side' normal value : 190 - 210Ω
      If value is ∞ then check R001.
   3) Checking resistance between 'N wire (SKYBLU)' and 'DB01 Neutral side' normal value : 0 - 0.1Ω

3. Checking ON/OFF pattern of LED1(Red), LED2(Green), LED3(Yellow)
   Apply the power then ALL LEDs are on for about 1 second. then changed to as follow.
   ■ **LED1 (Red)** : ALWAYS ON
   ■ **LED2 (Green)** : Blinking 4 times a second
   (This means communication between 2 micoms IC01 and IC50 is normal)
   ■ **LED3 (Yellow)** : OFF

● **In case of another pattern inverter micom detects some hardware trouble or abnormal condition.**

Yellow	Green	Red	Description	Note
Status indication				
OFF	OFF	OFF	Power OFF / No power (SMPS error)	
ON	ON	ON	Power on reset (1~2 seconds)	If always in this pattern IC01(inverter micom) has some trouble.
OFF	Blink	ON	Normal operation	
Hardware trouble				
OFF	OFF	ON	Communication Error between Main micom and inverter micom	
Blink	Blink	ON	Current sensor error	
ON	Blink	Blink	DC-LINK sensor error	
ON	ON	Blink	AC-Line zero crossing error DC LINK capacitor discharged.(Max 20sec.)	After power off this error will display until
ON	OFF	Blink	Option error (EEPROM error)	
Abnormal condition				
OFF	OFF	Blink	Comp. peak current (Over Current)	
OFF	Blink	OFF	Comp. starting error	
ON	OFF	ON	Comp. rotation error	
OFF	ON	Blink	DC-Link voltage error	
Blink	ON	OFF	Unit Over current protection	

4. Checking Display PCB LED if Error code is displayed.
   See error code table if displayed.

5. Checking DC voltage on each point

Item	Measuring point	Normal value
DC LINK	Q803 E(-)~D101 Cathode (+)	about 1.4 times as much as Power AC Voltage ex) AC220V → 305~310Vdc
inverter 15V	C803 voltage	14.5V~15.5V
Main control 12V	CN59 pin 1~pin 3	12V~15V
Main control 5V	CN59 pin 1~pin 2	4.75V~5.25V

6. Checking PFC
   When Input current is over 3.0A PFC circuit will work to control the harmonics of AC current.
   Checking is measuring DC-LINK voltage.
   PFC ON (Compressor is working) : DC LINK voltage is over 300Vdc (AC line >220V)
   After starting compressor DC Link voltage is going down because of compressor load.
   But in case of 3.0A above , DC link voltage will go up over 300V. This voltage is in proportion to AC input voltage.
   Current can be monitored with "VIEW MODE".
   Press K4 key on the outdoor display PCB for several times to change the display to sensor temperature value.
   Left 1 digit of the LED is data index and Right 3 digits are the value

Index	Value	Remark
C	Estimated Primary current value from Compressor current	The unit is 0.1A

12-3-3 Checking Indoor controller

1. MH✳✳✳FPEA✳/MH✳✳VP2-✳✳

   1) Checking FUSE

   This control PCB has 2 fuses, F701 and F702.

   If F702 is blown PCB circuit has some damage and replace PCB.

   2) Checking DC voltage

   Measure voltage between CN32 pin 1 (+12V) and CN32 pin 2 (GND).

   Normal voltage is between 11.5V and 12.5V.

12-3-4 Checking Power cable and Communication cable

See 12-2 "Checking and Testing operations" and installation manual.

12-3-5 Checking Temperature sensor

See 12-5 "Fault Diagnosis of Major Parts".

In case of a sensor in outdoor unit, temperature can be monitored with "VIEW MODE".

Press K4 key on the outdoor display PCB for several time to change the display to sensor temperature value.

Left 1 digit of the LED is data index and Right 2 digits are the value.

Index	Value	Remark
8	Discharge sensor temperature	The unit is degree C
9	OLP sensor temperature	
A	Condenser sensor temperature	
B	Outdoor sensor temperature	

12-3-6 Checking EEV

See 12-5 "Fault Diagnosis of Major Parts".
Current EEV step value can monitored with "VIEW MODE"
Press K4 key on the outdoor display PCB for several time to change the display to current EEV value.
Left 1 digit of the LED is data index and Right 3 digits is the value.

<table>
<tr><th>Index</th><th colspan="2">Value</th><th>Remark</th></tr>
<tr><td>3</td><td colspan="2">EEV-A step</td><td rowspan="5">The step value range is between Zero and 480.</td></tr>
<tr><td>4</td><td colspan="2">EEV-B step</td></tr>
<tr><td>5</td><td>EEV-C step</td><td rowspan="2">MH040FXEA2/MH052FXEA2/MH14✳✳2X/MH16✳✳2X/ MH18✳✳2X/MH19✳✳2X Always Zero</td></tr>
<tr><td>6</td><td>EEV-D step</td></tr>
</table>

12-3-7 Pipe matching

See 12-2 "Checking and Testing operations".

12-3-8 Checking Motor in indoor unit

See 12-5 "Fault Diagnosis of Major Parts".

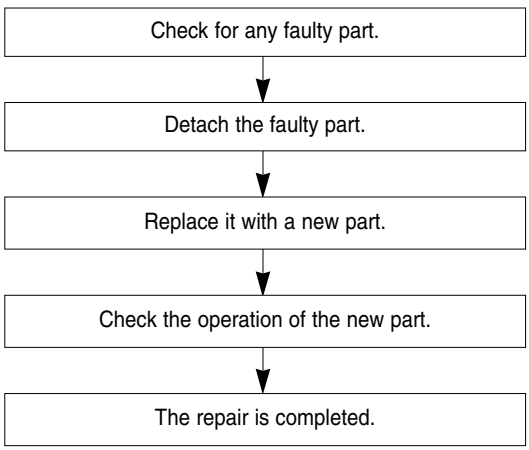
12-4 PCB Inspection

12-4-1 Cautions for Part Replacement

1. The human body carries much static electricity. Before touching a part for repair, replacement or the similar purpose, be sure to touch a grounded metallic portion by hand to let the static electricity go through the metallic portion to the earth. Especially when handling any micro computer or IC, carefully remove such static electricity before touching them.
2. When repairing any part on a work bench, be sure to place an insulative sheet on the bench and always keep the sheet surface neat without any metal fragments. If any such fragment touches a part, a secondary trouble will possibly be caused in the part.
3. Before replacing any parts, be sure to turn off the power supply. If such replacement is done with the power supply kept on, an electric shock, short circuit or destruction of a part may result.
4. During replacement or repair of a part, carefully handle it : The printed circuit board has fine lead wires (jumper wires) and glass-made parts (diode) on its substrate. So if a circuit board is roughly handled, such lead wires and parts will be easily broken or damaged by bending or shock.
5. When soldering the lead wires of any new part, be sure to polish them using an emery paper or the like before soldering them. Since the lead wires of any new part are covered with an oxide film, solder cannot adhere to the lead wires if not polished.
6. When soldering any part, care should be exercised not to apply any high-wattage soldering iron to the part for a long time. Some parts are of so low a heat resistance that they may be broken or have the properties changed if a soldering iron is so applied (Otherwise, the pattern may possibly be separated and raised).
7. The heat of the soldering iron should be transferred to the entire object to be soldered. If the solder pieces are not well fused due to insufficient transfer of the heat from the soldering iron, no satisfactory electrical continuity can be assured even if the soldered objects appear well connected to each other.
8. The solder used should be limited to a minimum. If excessive solder is used, it will cause inter-pattern contact, which may cause malfunction of the circuit.
9. Although some part of the PCB surface are coated with coating material for protection from dust and dirt, soldering is also available to the coating part. Because this coating is thin and is weak for soldering heat. But coating material remaining on the solder part should be cleaned up before soldering a new component to prevent the solder part from becoming bad conduction.

12-4-2 Procedure

The parts should be replaced in the following procedure.



12-5 Fault Diagnosis of Major Parts

Preparation : multimeter (AC voltage, DC voltage, Resistance)

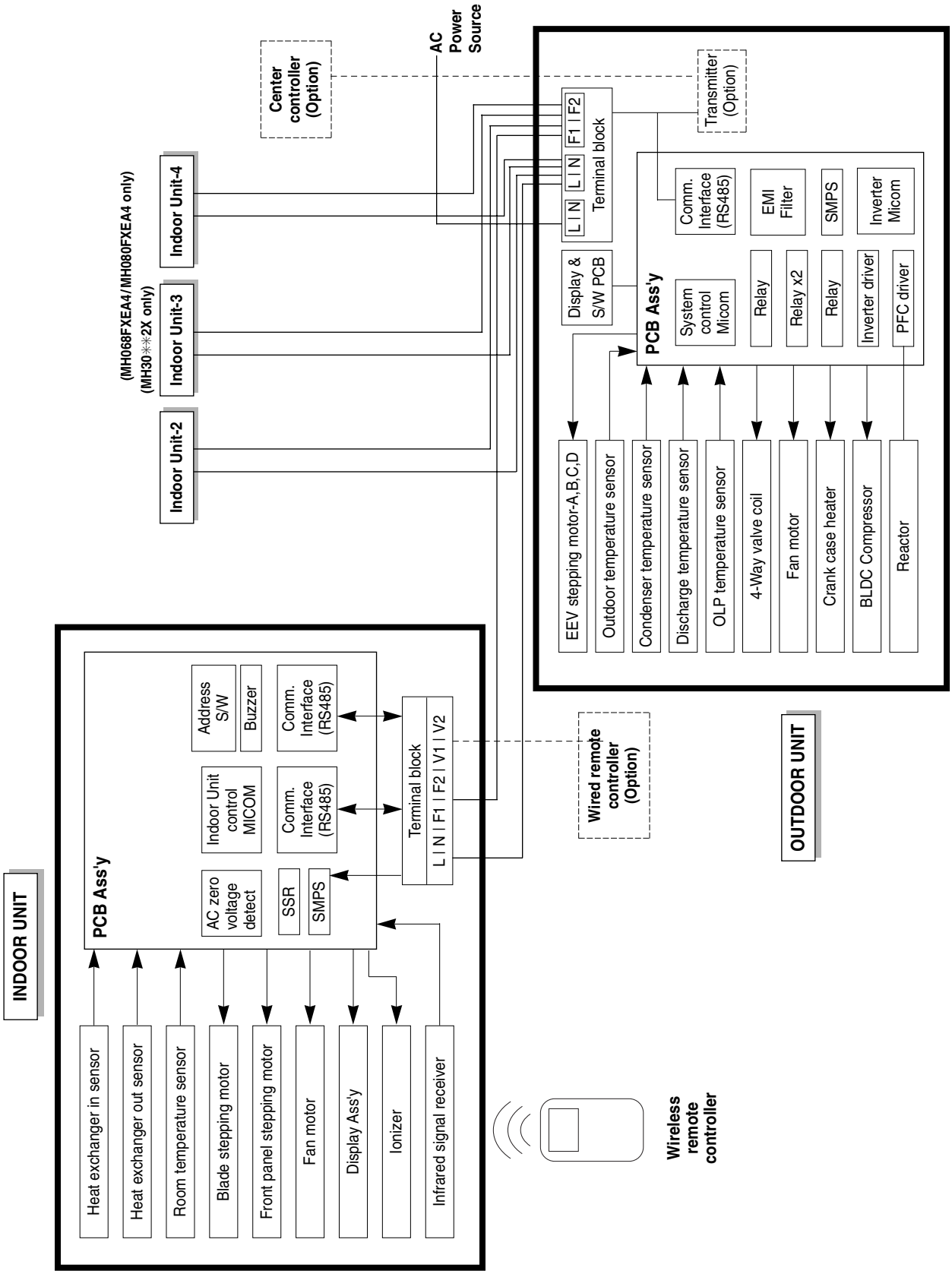
<table>
<tr><th>Part</th><th colspan="2">Diagnosis</th></tr>
<tr><td rowspan="3">Indoor
Temperature sensor
Heat exchanger in/out sensor
Outdoor
Temperature sensor
Condenser temperature sensor</td><td colspan="2">Measure the resistance between terminals of the sensor connector housing.
In case of outdoor unit sensor, "view mode" is used for checking sensor temperature.
In case of Indoor temperature sensor, temperature is displayed on the display unit in "Fan Mode" operation.</td></tr>
<tr><td>Normal</td><td>
<table>
<tr><td>Ambient temperature</td><td>15˚C</td><td>20˚C</td><td>25˚C</td><td>30˚C</td><td>25˚C</td><td>40˚C</td></tr>
<tr><td>Resistance of sensor[KΩ]</td><td>14.7</td><td>12.1</td><td>10</td><td>8.3</td><td>6.9</td><td>5.8</td></tr>
</table>
</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
<tr><td rowspan="3">Outdoor
Discharge temperature sensor
OLP temperature sensor</td><td colspan="2">Measure the resistance between terminals of the sensor connector housing.
In case of outdoor unit sensor, "view mode" is used for checking sensor temperature.</td></tr>
<tr><td>Normal</td><td>
<table>
<tr><td>Ambient temperature</td><td>0˚C</td><td>10˚C</td><td>20˚C</td><td>30˚C</td><td>40˚C</td><td>50˚C</td></tr>
<tr><td>Resistance of sensor[KΩ]</td><td>553</td><td>362</td><td>242</td><td>166</td><td>165</td><td>82</td></tr>
</table>
</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
<tr><td rowspan="3">Indoor Fan Motor</td><td colspan="2">Measure the resistance between terminals of the Motor connector housing</td></tr>
<tr><td>Normal</td><td>At the normal temperature (10˚C - 30˚C)
<table>
<tr><td rowspan="2">Terminals(wire color)</td><td colspan="3">Resistance[Ω]</td><td rowspan="2">Remark</td></tr>
<tr><td>*MH✳✳✳✳✳✳✳</td><td>MH035FPEA
MH✳✳✳✳✳-12</td><td>MH052FPEA
MH052FPEA1</td></tr>
<tr><td>Yellow-Blue</td><td>250~280</td><td>250~280</td><td>120~150</td><td>Main</td></tr>
<tr><td>Yellow-Red</td><td>420~480</td><td>330~370</td><td>120~150</td><td>Sub</td></tr>
</table>
*MH020FPEA/MH023FPEA/MH026FPEA/MH✳✳✳✳✳-07/MH✳✳✳✳✳-09
<table>
<tr><td>Terminal(wire color)</td><td>Model</td><td>Bender</td><td>Resistance(Ω)</td><td>Remark</td></tr>
<tr><td rowspan="5">Yellow-Blue</td><td rowspan="3">MH023/026/035FWEA
MH✳✳VW2-✳✳</td><td>SHIBAURA</td><td>356~435</td><td rowspan="5">Main</td></tr>
<tr><td>SINYA</td><td>531~650</td></tr>
<tr><td>DAEYANG</td><td>312~381</td></tr>
<tr><td rowspan="2">MH052FWEA</td><td>SUNGSHIN</td><td>130~159</td></tr>
<tr><td>DAEYANG</td><td>211.5~258.5</td></tr>
<tr><td rowspan="5">Red-Yellow</td><td rowspan="3">MH023/026/035FWEA
MH✳✳VW2-✳✳</td><td>SHIBAURA</td><td>324.9~397</td><td rowspan="5">Sub</td></tr>
<tr><td>SINYA</td><td>320~391</td></tr>
<tr><td>DAEYANG</td><td>252~308</td></tr>
<tr><td rowspan="2">MH052FWEA</td><td>SUNGSHIN</td><td>106.2~130</td></tr>
<tr><td>DAEYANG</td><td>164.7~201.3</td></tr>
</table>
</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
<tr><td rowspan="3">Outdoor Fan Motor</td><td colspan="2">Measure the resistance between terminals of the Motor connector housing</td></tr>
<tr><td>Normal</td><td>
<table>
<tr><td>Terminals(wire color)</td><td>Resistance[Ω]</td><td>Remark</td></tr>
<tr><td>Red-Blue</td><td>95~105</td><td>Main 1</td></tr>
<tr><td>Yellow-Blue</td><td>95~105</td><td>Main 2</td></tr>
<tr><td>Blue-White(run capa line)</td><td>60~75</td><td>Sub</td></tr>
<tr><td>Red-White Blue(run capa line)</td><td>0~1</td><td>Thermal fuse</td></tr>
</table>
</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
<tr><td rowspan="3">Outdoor unit EEV
Stepping motor</td><td colspan="2">Measure the resistance between terminals of the Motor connector housing</td></tr>
<tr><td>Normal</td><td>40-50Ω Orange-Gray, Red-Gray, Yellow-Gray, Black-Gray</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
</table>

Fault Diagnosis of Major Parts(cont.)

Preparation : multimeter (AC voltage, DC voltage, Resistance)

<table>
<tr><th>Part</th><th colspan="2">Diagnosis</th></tr>
<tr><td rowspan="3">Crank case heater</td><td colspan="2">Measure the resistance between terminals</td></tr>
<tr><td>Normal</td><td>1.1-1.3KΩ</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
<tr><td rowspan="3">Indoor unit step motor
Flap, Front panel</td><td colspan="2">Measure the resistance between terminals of the Motor connector housing</td></tr>
<tr><td>Normal</td><td>
<table>
<tr><th>Motor</th><th>Resistance[Ω]</th><th>Terminals(wire color)</th></tr>
<tr><td>Flap</td><td>280~320</td><td rowspan="2">Red-Yellow, Red-Orange,
Red-Blue, Red-Pink</td></tr>
<tr><td>Front panel</td><td>110~130</td></tr>
</table>
</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
</table>

13. Block Diagram



14. Reference for Installation

14-1 Selecting Area for Installation

Select an area for installation that is suitable to customer's needs.

14-1-1 Indoor Unit

1. Make sure that you install the indoor unit in an area providing good ventilation.
   It must not be blocked by an obstacle affecting the airflow near the air inlet and the air outlet.

2. Make sure that you install the indoor unit in an area allowing good air handling and endurance of vibration of the indoor unit.

3. Make sure that you install the indoor unit in an area where there is no source of heat or vapor nearby.

4. Make sure that you install the indoor unit in an area from which hot or cool air is spread evenly in a room.

5. Make sure that you install the indoor unit in an area away from TVs, audio units, cordless phones, fluorescent lighting fixtures and other electrical appliances (at least 1 meter).

6. Make sure that you install the indoor unit in an area which provides easy pipe connection with the outdoor unit, and easy drainage for condensed water.

7. Make sure that you install the indoor unit in an area which is large enough to accommodate the measurements shown in figure on the next page.

- It is harmful to the air conditioner if it is used in the following environments: greasy areas (including areas near machines), salty areas such as coast areas, areas where sulfuric gas is present such as hot spring areas. Contact your dealer for advice.

14-1-2 Outdoor Unit

1. Make sure that you install the outdoor unit in area not exposed to the rain or direct sun light.(Install a separate sunblind if exposed to direct sun light.)

2. Make sure that you install the outdoor unit in area allowing the good air moment, not amplifying noise or vibration, especially to avoid disturbing neighbors. (Fix the unit firmly if it is mounted in a high place.)

3. Make sure that you install the outdoor unit in area providing the good ventilation and which is not dusty. It must not be blocked by any obstacle affecting the airflow near the air inlet and the air outlet.

4. Make sure that you install the outdoor unit in area free from animals or plants.

5. Make sure that you install the outdoor unit in area not blocking the traffic.

6. Make sure that you install the outdoor unit in area easy to drain condensed water from the indoor unit.

7. Make sure that you install the outdoor unit in area which provides easy connection within the maximum allowable length of a coolant pipe.
   If you install the excessive length of pipe, add additional refrigerant as 15g per unit meter; refer to the table below.

Model	Total connecting pipe length(L)	Adding refrigerant
MH040FXEA2, MH052FXEA2 MH14✳✳2X, MH16✳✳2X MH18✳✳2X, MH19✳✳2X	LT ≤ 20m	Changeless
	LT > 20m	(LT-20m) x 15g
MH068FXEA4 MH080FXEA4 MH30✳✳2X	LT ≤40m	Chargeless
	LT > 40m	(LT-40m) x 15g

8. Make sure that you install the outdoor unit in an area which is large enough to accommodate the measurements shown in figure on the next page.

14-1-3 Remote Control Unit

1. Make sure that you use the remote control unit in an area free from obstacles such as curtains etc, which may block signals from the remote control unit.

2. Make sure that you put the remote control unit in an area not exposed to direct sunlight, and where there is no source of heat.

3. Make sure that you use the remote control unit in an area away from TVs, audio units, cordless phones, fluorescent lighting fixtures and other electrical appliances (at least 1 meter).

14-2 Connecting Up and Purging the Circuit

⚠ • The air in the indoor unit and in the pipe must be purged. If air remains in the refrigeration pipes, it will affect the compressor, reduce to cooling capacity and could lead to a malfunction. Refrigerant for air purging is not charged in the outdoor unit. Use Vacuum Pump as shown at the right figure. Each unit must be purged in turn.

■ MH040FXEA2/MH052FXEA2/MH14✳✳2X/MH16✳✳2X/MH18✳✳2X/MH19✳✳2X

1. Check the piping connections.

2. Connect the charging hose of low pressure side of manifold gauge to the packed valve having a service port (3/8" service valve) as shown at the figure.

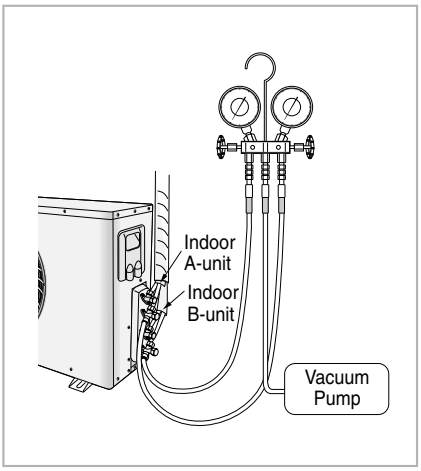
3. Open the valve of the low pressure side of manifold gauge counter-clockwise.

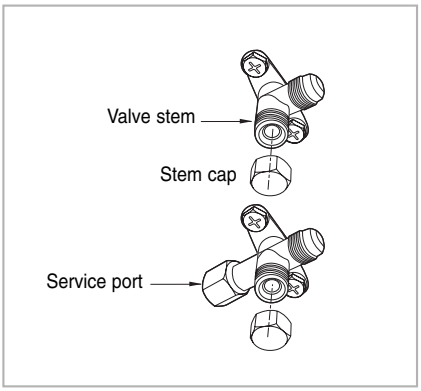
4. Purge the air from the system using vacuum pump for about 10 minutes.
   - Close the valve of the low pressure side of manifold gauge clockwise.
   - Make sure that pressure gauge show -0.1MPa(-76cmHg) after about 10 minutes.
   - This procedure is very important in order to avoid gas leak.
   - Turn off the vacuum pump
   - Remove the hose of the low pressure side of manifold gauge.

5. Set valve cork of both liquid side and gas side of packed valve to the open position.

6. Mount the valve stem nuts and the service port cap to the valve, and tighten them at the torque of 183kgf•cm with a torque wrench.

7. Check for gas leakage.
   - At this time, especially check for gas leakage from the 3-Way valve's stem nuts, and from the service port cap.





■ MH068FXEA4/MH080FXEA4/MH30✳✳2X

1. Check the piping connections.

2. Connect the charging hose of low pressure side of manifold gauge to the packed valve having a service port (5/8" Packed valve) as shown at the figure (Value stem: 1/2" - 20UNF).

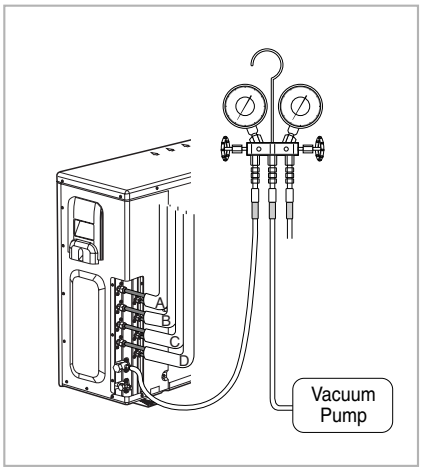
3. Open the valve of the low pressure side of manifold gauge counter-clockwise.

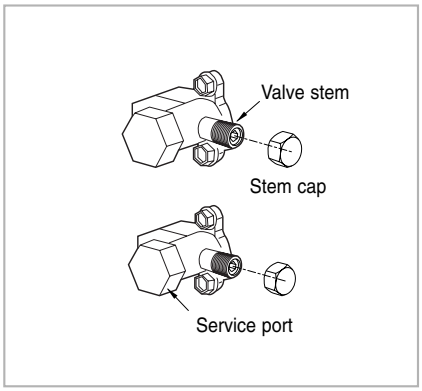
4. Purge the air from the system using vacuum pump for about 30 minutes.
   - Close the valve of the low pressure side of manifold gauge clockwise.
   - Make sure that pressure gauge show -0.1MPa(-76cmHg) after about 30 minutes.
   - This procedure is very important in order to avoid gas leak.
   - Turn off the vacuum pump.
   - Remove the hose of the low pressure side of manifold gauge.

5. Set valve cork of both liquid side and gas side of packed valve to the open position.

6. Mount the valve stem nuts and the service port cap to the valve, and tighten them at the torque of 183kgf•cm with a torque wrench.

7. Check for gas leakage.
   - At this time, especially check for gas leakage from the 3-way valve's stem nuts, and from the service port cap.





14-3 Refrigerant Refill

14-3-1 MH040FXEA2/MH052FXEA2/MH14✳✳2X/MH16✳✳2X/MH18✳✳2X/MH19✳✳2X

Refill an air conditioner with refrigerant when refrigerant has been leaked at installing or using.

1) Purge air(for new installation only).

2) Turn the 3-Way valve clockwise to close, connect the pressure gauge (low pressure side) to the service valve, and open the 3-Way valve again.

3) Connect the tank to refill with refrigerant.

4) Set the unit to cool operation mode.

5) Check the pressure indicated by the pressure gauge(low pressure side).

   *** Standard pressure should be 8.0~9.0kg/cm² in a regular and high operation mode.**

   *** Refer to the 15-2 Pressure Graph.**

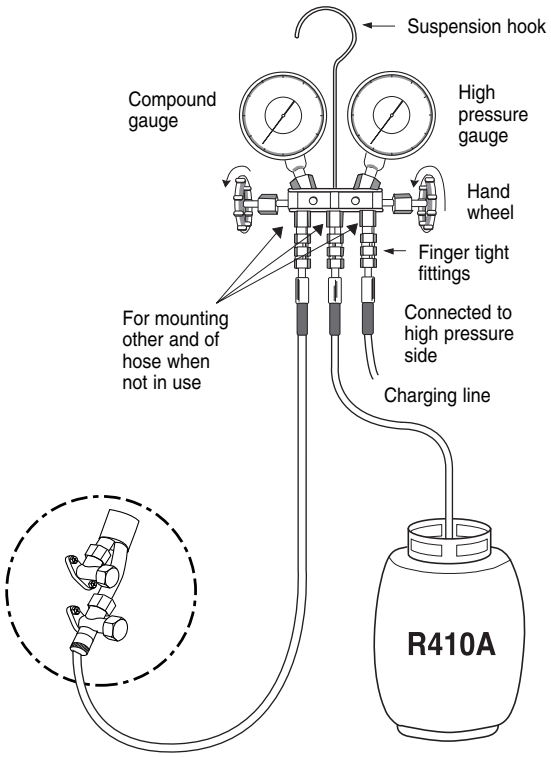
6) Open the refrigerant tank and fill with refrigerant until the rated pressure is reached.

   *** It is recommended not to pour the refrigerant in too quickly, but gradually while operating a pressure valve.**

7) Stop operation of the air conditioner.

8) Close the 3-Way valve, disconnect the pressure gauge, and open the 3-Way valve again.

9) Close the cap of each valve.



14-3-2 MH068FXEA4/MH080FXEA4/MH30✳✳2X

Refill an air conditioner with refrigerant when refrigerant has been leaked at installing or using.

1) Purge air(for new installation only).

2) Turn the 5/8" service valve clockwise to close, connect the pressure gauge (low pressure side) to the service valve, and open the 5/8" service valve again.

3) Connect the tank to refill with refrigerant.

4) Set the unit to cool operation mode.

5) Check the pressure indicated by the pressure gauge(low pressure side).

   *** Standard pressure is should be 8.0~9.0kg/cm² in a regular, high operation mode.**

   *** Refer to the 15-2 Pressure Graph.**

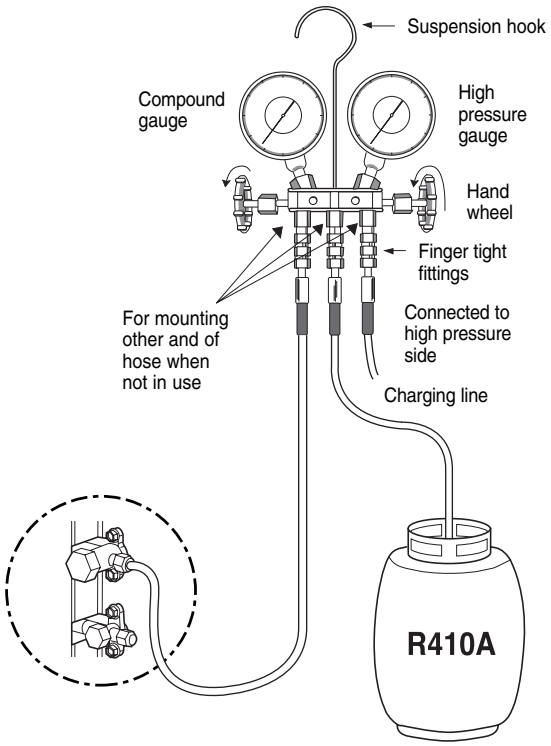
6) Open the refrigerant tank and fill with refrigerant until the rated pressure is reached.

   *** It is recommended not to pour the refrigerant in too quickly, but gradually while operating a pressure valve.**

7) Stop operation of the air conditioner.

8) Close the 5/8" service valve, disconnect the pressure gauge, and open the 5/8" service valve again.

9) Close the cap of each valve.



14-4 Refrigerant Adjustment

■ MH040FXEA2/MH052FXEA2/MH14✳✳2X/MH16✳✳2X/MH18✳✳2X/MH19✳✳2X

Class	At installation		At service	
Connection Pipe Length	Air-Purge Method	Refrigerant Adjustment	Air-Purge Method	Refrigerant Quantity
Standard < TOTAL ≤ 20m	Refer to the detailed Connecting up and purging the circuit. (14-3 page)	Unnecessary	Purge air using a vacuum pump or an additional refrigerant cylinder.	refer to specification sheet
Max. < TOTAL = 40m		Add "15g" of refrigerant (R410A) for every 1m.		Add "15g" of refrigerant (R410A) for every 1m.

■ MH068FXEA4/MH080FXEA4/MH30✳✳2X

Class	At installation		At service	
Connection Pipe Length	Air-Purge Method	Refrigerant Adjustment	Air-Purge Method	Refrigerant Quantity
Standard < TOTAL ≤ 40m	Refer to the detailed Connecting up and purging the circuit. (14-3 page)	Unnecessary	Purge air using a vacuum pump or an additional refrigerant cylinder.	refer to specification sheet
Max. < TOTAL = 70m		Add "15g" of refrigerant (R410A) for every 1m.		Add "15g" of refrigerant (R410A) for every 1m.

It would be the best choice to use the standard tube length to keep the basic quality of Room Air conditioner, for example cooling and heating capacity, sound level, vibration level, and reliability.
But, according to a certain different installation condition, the connection tube length could be changed in the recommendation length that is shown above.
In this case, installer should keep the installation condition to keep the quality of Room Air conditioner.

- Refrigerant should be charged additionally as written above according to the change of the length of the connection tube. It needs to affect the decrease in cooling and heating capacity or of the reliability of compressor that may be caused by a lack of refrigerant.
- Installation position difference between the indoor unit and the outdoor unit should not exceed over than 15 meters.
- When the connection pipe is been extended longer than 5 meters, it might need to change the diameter of the electrical wire to a larger size in order to keep a voltage drop for starting room air conditioner is not less than 85% of the rated voltage. And then, a voltage meter will be useful to check the rate of the voltage drop.

14-5 Flare Nut Fixing Torque

Outer diameter	Torque(kg·cm)	
	Fixing Torque	Final Torque
ø 6.35 mm (Liquid Side)	160	200
ø 9.52 mm (Gas Side)	300	350
ø 12.7 mm (Gas Side)	500	550

14-6 "Pump down" Procedure

14-6-1 MH040FXEA2/MH052FXEA2/MH14✳✳2X/MH16✳✳2X/MH18✳✳2X/MH19✳✳2X

Pump down will be carried out when an evaporator is replaced or when the unit is relocated in another area.

1) Remove the caps from the 2-Way valve and the 3-Way valve.

2) Turn the 3-Way valve clockwise to close and connect a pressure gauge (low pressure side) to the service valve, and open the 3-Way valve again.

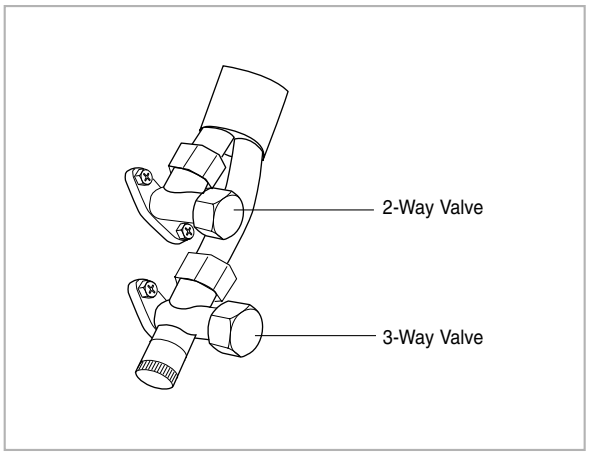
3) Set the unit to cool operation mode. (Check if the compressor is operating.)

4) Turn the 2-Way valve clockwise to close.

5) When the pressure gauge indicates "0" turn the 3-Way valve clockwise to close.

6) Stop operation of the air conditioner.

7) Close the cap of each valve.



Remarks

Relocation of the air conditioner

- Refer to this procedure when the unit is relocated.
  1. Carry out the pump down procedure (refer to the details of 'pump down').
  2. Remove the power cord.
  3. Disconnect the assembly cable from the indoor and outdoor units.
  4. Remove the flare nut connecting the indoor unit and the pipe.
     At this time, cover the pipe of the indoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
  5. Disconnect the pipe connected to the outdoor unit.
     At this time, cover the valve of the outdoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
  6. Make sure you do not bend the connection pipes in the middle and store together with the cables.
  7. Move the indoor and outdoor units to a new location.
  8. Remove the mounting plate for the indoor unit and move it to a new location.

14-6-2 MH068FXEA4/MH080FXEA4/MH30✳✳2X

Pump down will be carried out when an evaporator is replaced or when the unit is relocated in another area.

1) Remove the caps from the 3/8" service valve and the 5/8" service valve.

2) Turn the 5/8" service valve clockwise to close and connect a pressure gauge (low pressure side) to the service valve, and open the 5/8" service valve again.

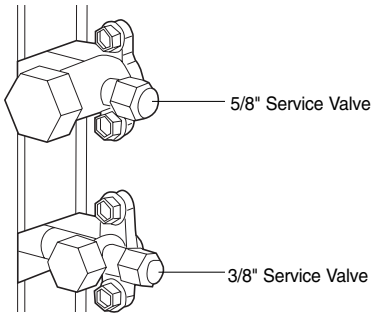
3) Set the unit to cool operation mode. (Check if the compressor is operating.)

4) Turn the 3/8" service valve clockwise to close.

5) When the pressure gauge indicates "0" turn the 5/8" service valve clockwise to close.

6) Stop operation of the air conditioner.

7) Close the cap of each valve.



Remarks

Relocation of the air conditioner

• Refer to this procedure when the unit is relocated.

1. Carry out the pump down procedure (refer to the details of 'pump down').
2. Remove the power cord.
3. Disconnect the assembly cable from the indoor and outdoor units.
4. Remove the flare nut connecting the indoor unit and the pipe.
   At this time, cover the pipe of the indoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
5. Disconnect the pipe connected to the outdoor unit.
   At this time, cover the valve of the outdoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
6. Make sure you do not bend the connection pipes in the middle and store together with the cables.
7. Move the indoor and outdoor units to a new location.
8. Remove the mounting plate for the indoor unit and move it to a new location.

15. Reference Information

15-1 Common sense of refrigeration

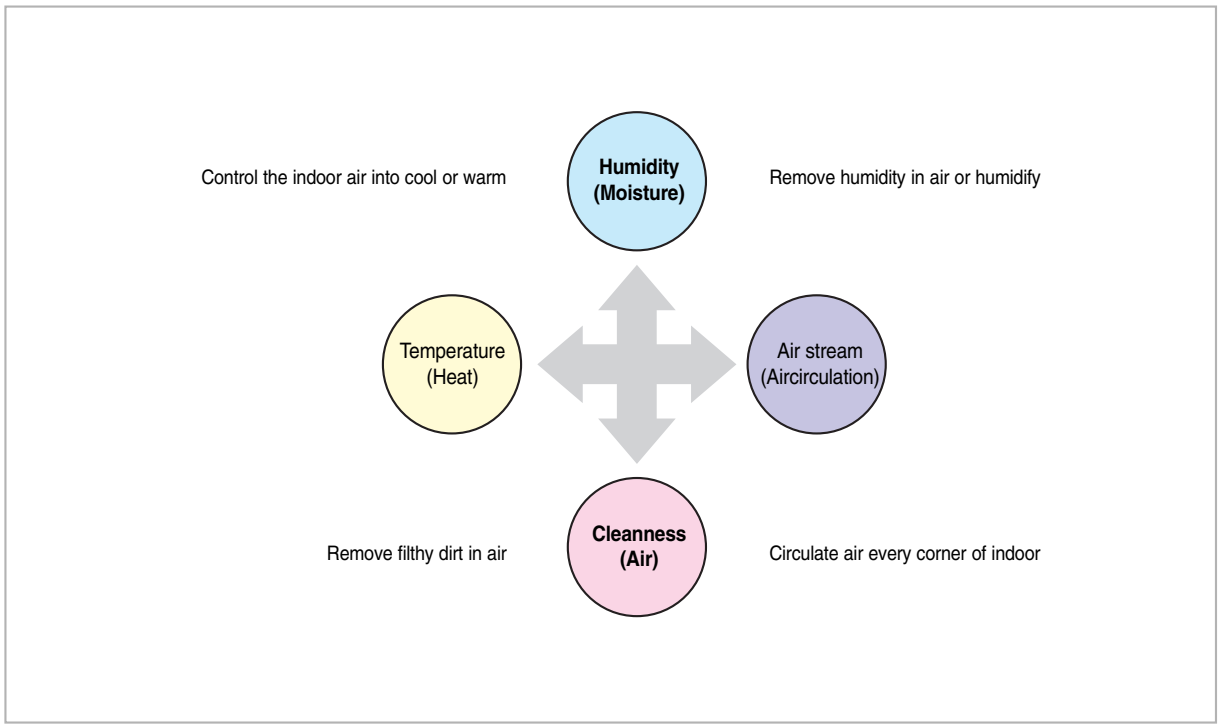
15-1-1 Air supplier

■ Air supplier?

It supplies fresh air to the building or room through procedure of air circulation for fresh environment.

■ Effectiveness of air supplier

It diminishes the stress or fatigue and enhances vivid desire through fresh air circulation. Also, filthy air indoor is being cleaned by Air-Filter and it keeps clean and fresh environment and dehumidification. Temperature, humidity, air stream, cleanness are called for factors of air supplier and they are kept in proper condition for usage purpose.



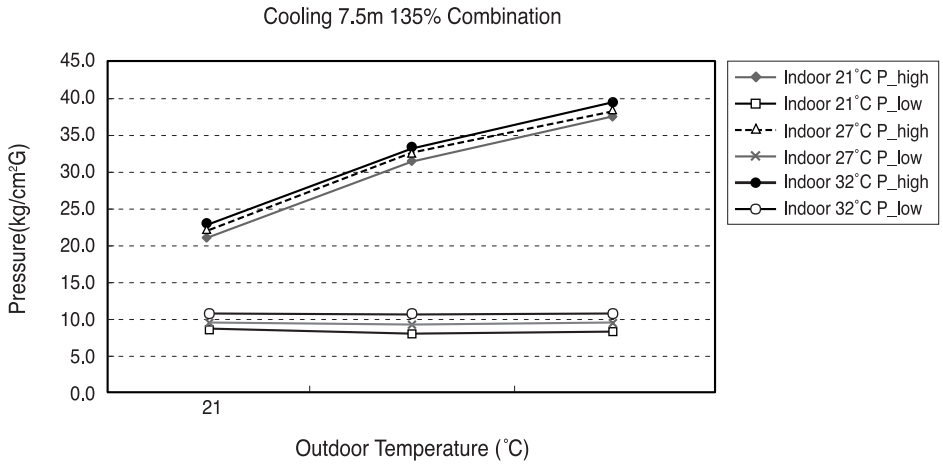
■ Four factors of air suppliers

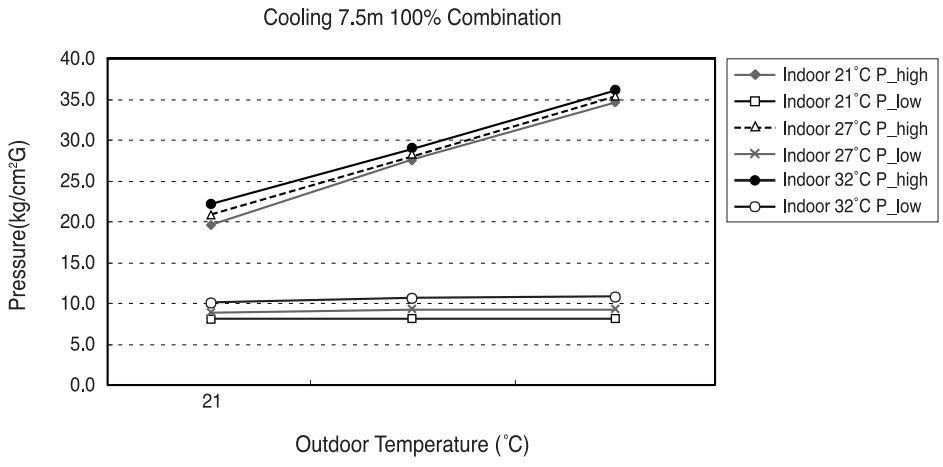
The human body keeps regular temperature regarding the human body's freshness.
For keeping freshness, heat generated from human body should emit outside of the body by air circulation, conduction, emission, and evaporation. The human body feels freshness when the emission rate is 40~45%, which was emitted by a radiation when it is comfortable and warm, and air circulation and conduction is 20~30%, and evaporation is 20~24%.
It sometimes may depends on seasonal factor, wearing condition, age, sex and mental state other than indoor environment. But generally the value of fresh indoor temperature is that below 0.2(m/s) of indoor air circulation, the temperature is 21~28˚C when the wall temperature is the same as the indoor's and relative humidity is 30~31% in summer, the winter temperature is 20~24˚C and relative humidity is 30~60% in winter.

15-2-1 MH052FXEA2(MH040FXEA2/MH14✳✳2X/MH16✳✳2X/MH18✳✳2X/MH19✳✳2X refer to the 100% combination)

■ Cooling(7.5m–Piping)

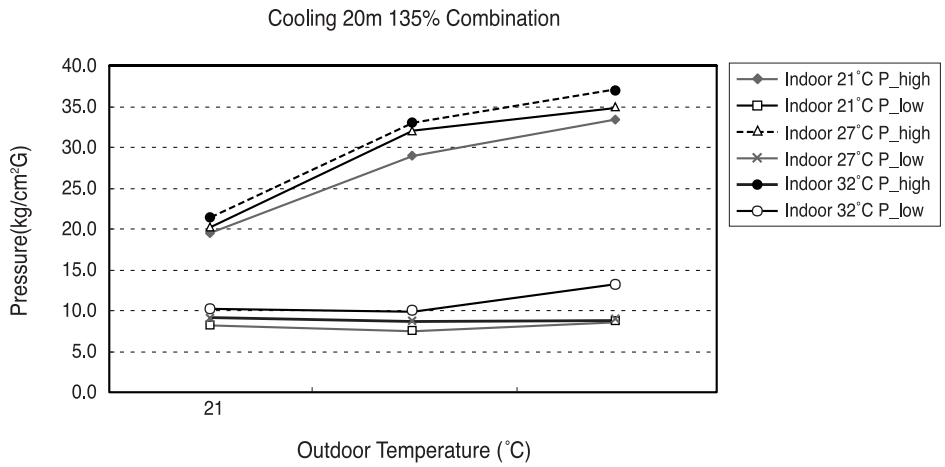
		135% (ex. 035+035)				100% (ex. 026+026)			
Outdoor	Indoor	P_high	P_low	T_dis	T_suc	P_high	P_low	T_dis	T_suc
21	21	21.10	8.60	61.40	8.70	19.60	8.00	58.30	7.40
	27	22.00	9.50	59.50	11.30	21.00	8.78	59.30	9.30
	32	22.90	10.65	58.50	14.30	22.20	10.11	58.70	12.90
35	21	31.29	8.00	84.30	6.50	27.70	8.08	79.00	7.30
	27	32.50	9.10	84.80	8.90	28.10	9.20	77.30	11.30
	32	33.06	10.50	82.00	13.80	28.90	10.58	74.30	14.13
43	21	37.50	8.20	94.20	7.30	34.70	8.10	93.10	7.30
	27	38.20	9.40	94.30	10.70	35.50	9.20	91.10	10.33
	32	39.40	10.70	92.40	14.40	36.10	10.80	88.10	14.60

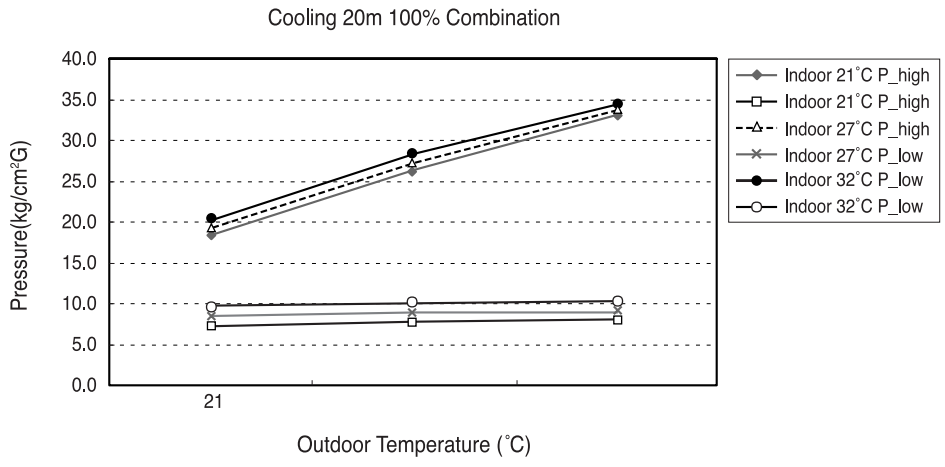




■ Cooling(20m–Piping)

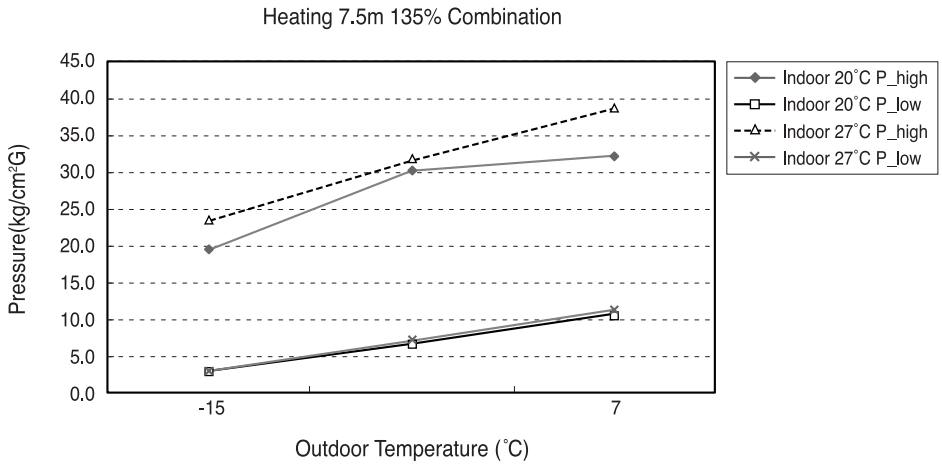
		135% (ex. 035+035)				100% (ex. 026+026)			
Outdoor	**Indoor**	**P_high**	**P_low**	**T_dis**	**T_suc**	**P_high**	**P_low**	**T_dis**	**T_suc**
21	21	19.60	8.30	60.23	11.19	18.40	7.33	61.80	9.80
	27	20.40	9.23	58.90	13.62	19.30	8.50	58.80	12.10
	32	21.50	10.26	58.20	15.10	20.30	9.80	57.70	14.20
35	21	29.10	7.60	85.10	9.20	26.40	7.82	81.60	10.70
	27	32.20	8.70	84.00	11.60	27.30	8.99	78.40	13.10
	32	33.20	9.90	81.70	14.50	28.40	10.13	76.80	15.10
43	21	33.50	8.60	94.80	9.70	33.20	8.10	93.20	10.40
	27	35.00	8.90	93.20	12.20	33.70	9.00	91.30	12.30
	32	37.20	13.34	92.30	17.60	34.40	10.40	88.20	15.40

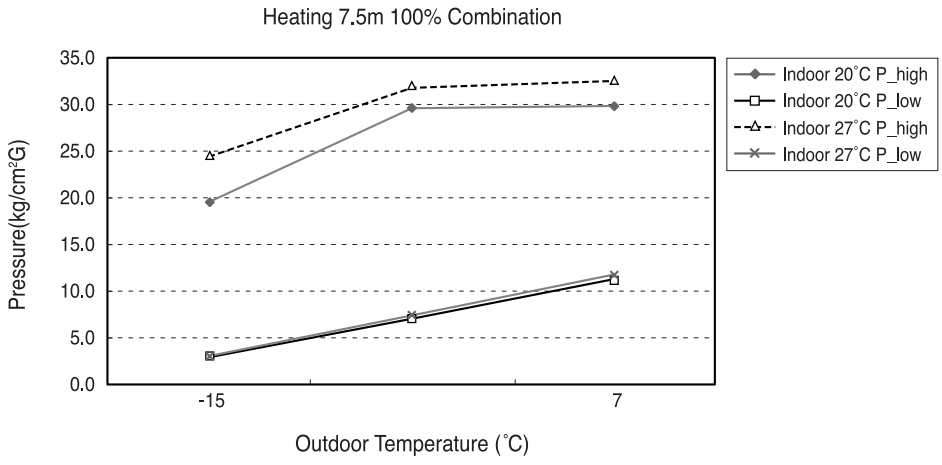




■ Heating(7.5m–Piping)

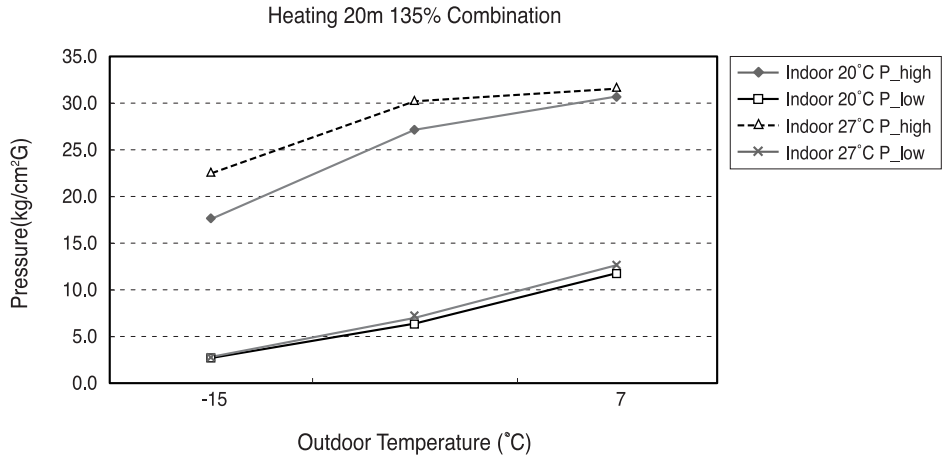
		135% (ex. 035+035)				100% (ex. 026+026)			
Outdoor	**Indoor**	**P_high**	**P_low**	**T_dis**	**T_suc**	**P_high**	**P_low**	**T_dis**	**T_suc**
-15	20	19.41	2.82	65.20	-19.10	19.52	2.81	68.20	-18.70
	27	23.30	2.83	71.40	-18.90	24.42	2.92	70.20	-17.30
7	20	30.20	6.60	81.20	-1.40	29.60	6.90	80.48	-0.10
	27	31.50	7.00	87.00	0.60	31.80	7.30	83.50	1.60
24	20	32.20	10.58	79.50	13.11	29.90	11.20	73.10	15.30
	27	38.59	11.15	84.10	13.30	32.60	11.70	77.80	16.50

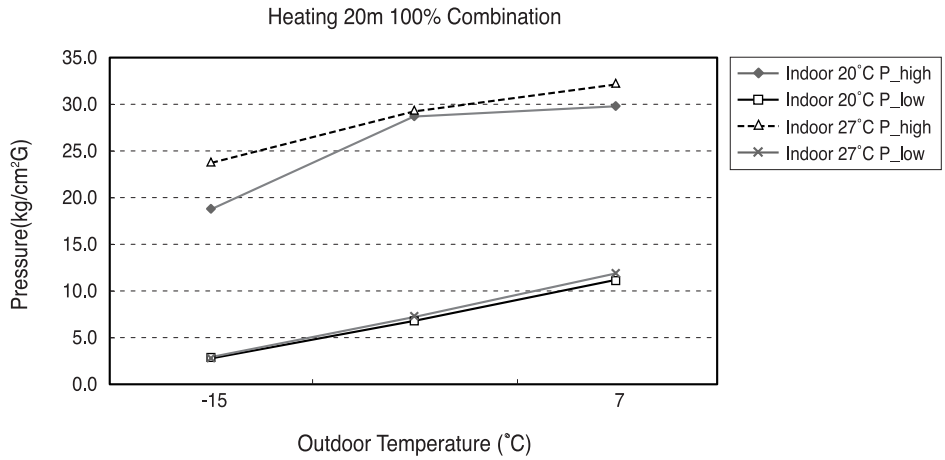




■ Heating(20m–Piping)

		135% (ex. 035+035)				100% (ex. 026+026)			
Outdoor	**Indoor**	**P_high**	**P_low**	**T_dis**	**T_suc**	**P_high**	**P_low**	**T_dis**	**T_suc**
-15	20	17.59	2.65	63.40	-20.90	18.80	2.72	67.40	-17.50
	27	22.50	2.84	70.10	-19.60	23.70	2.95	71.20	-17.00
7	20	27.20	6.40	80.10	-0.80	28.70	6.80	80.11	-0.40
	27	30.20	6.96	85.70	0.40	29.20	7.10	83.40	1.40
24	20	30.70	11.80	78.50	13.90	29.80	11.10	73.80	15.10
	27	31.54	12.60	83.20	21.70	32.10	11.80	79.80	15.80

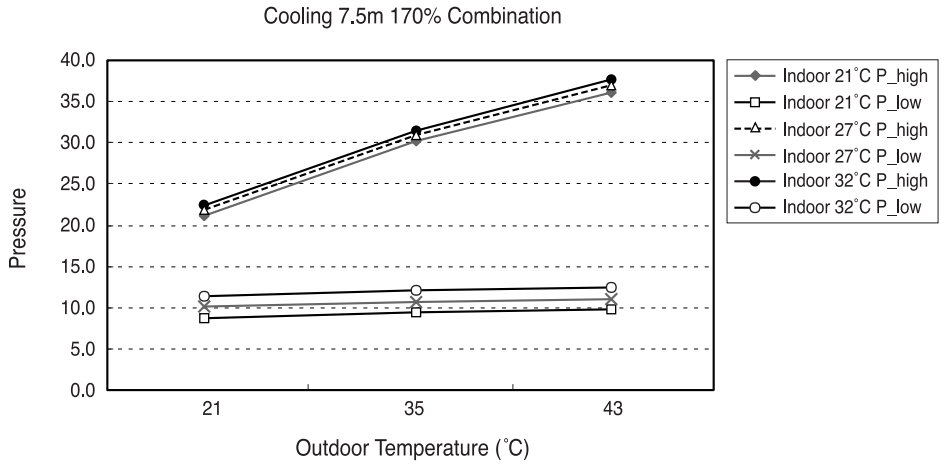


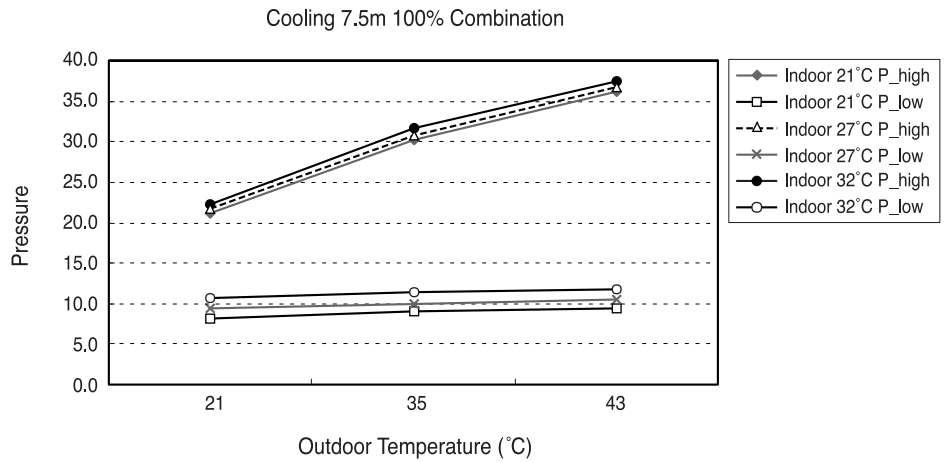


15-2-2 MH068FXEA4/MH080FXEA4(MH30VP2X/MH30VW2X refer to the 100% combination)

■ Cooling(7.5m~Piping)

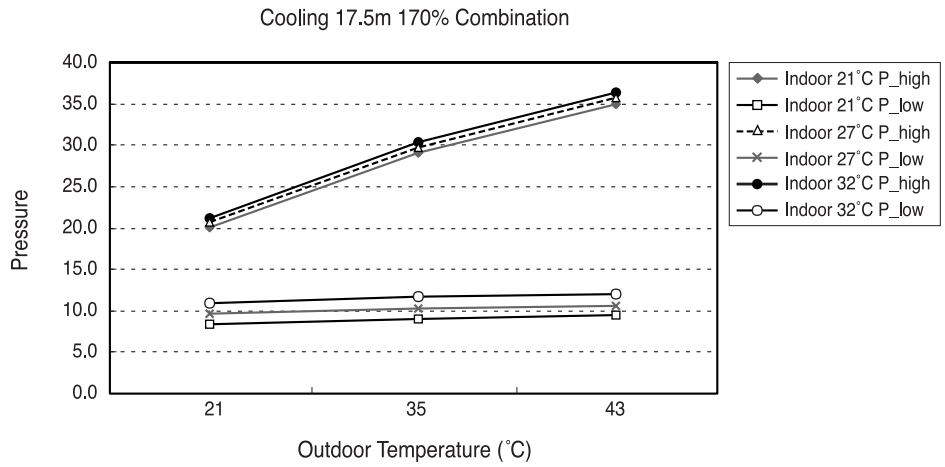
		170%(ex.026+026+035+052)				100%(ex.026+026+052)			
Outdoor	Indoor	P_high	P_low	T_dis	T_suc	P_high	P_low	T_dis	T_suc
21	21	21.2	8.7	58.4	10.9	21.2	8.2	58.7	8.2
	27	21.9	10.1	57.5	13.9	21.7	9.4	57.1	11.4
	32	22.4	11.3	56.0	16.4	22.2	10.6	55.8	14.5
35	21	30.3	9.4	78.5	12.8	30.2	9.0	78.5	10.2
	27	30.9	10.6	78.7	16.8	30.7	10.0	78.0	14.2
	32	31.6	12.0	76.3	19.4	31.7	11.4	76.7	17.2
43	21	36.1	9.8	89.8	12.8	36.2	9.4	91.5	11.4
	27	37.0	11.1	90.5	17.7	36.8	10.6	89.1	14.2
	32	37.6	12.5	88.2	20.6	37.4	11.8	86.8	16.7

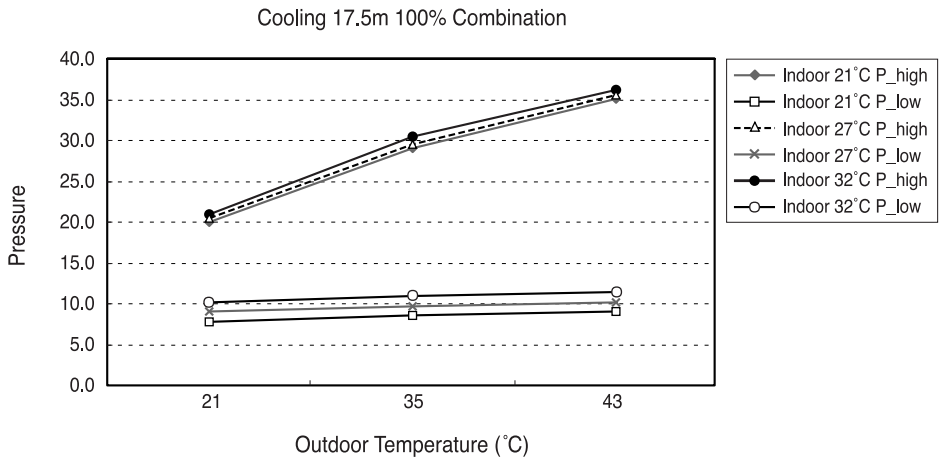




■ Cooling(17.5m~Piping)

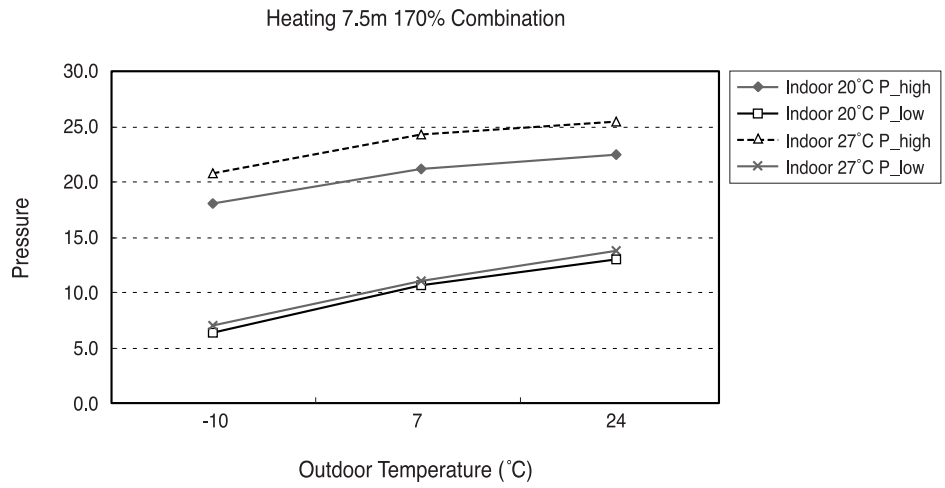
		170%(ex.026+026+035+052)		100%(ex.026+026+052)	
Outdoor	**Indoor**	**P_high**	**P_low**	**P_high**	**P_low**
21 / 15	21 / 15	20.0	8.3	20.0	7.8
	27 / 19	20.7	9.7	20.5	9.0
	32 / 23	21.2	10.9	21.0	10.2
35 / 24	21 / 15	29.1	9.0	29.0	8.6
	27 / 19	29.7	10.2	29.5	9.6
	32 / 23	30.4	11.6	30.5	11.0
43 / 26	21 / 15	34.9	9.4	35.0	9.0
	27 / 19	35.8	10.7	35.6	10.2
	32 / 23	36.4	12.1	36.2	11.4

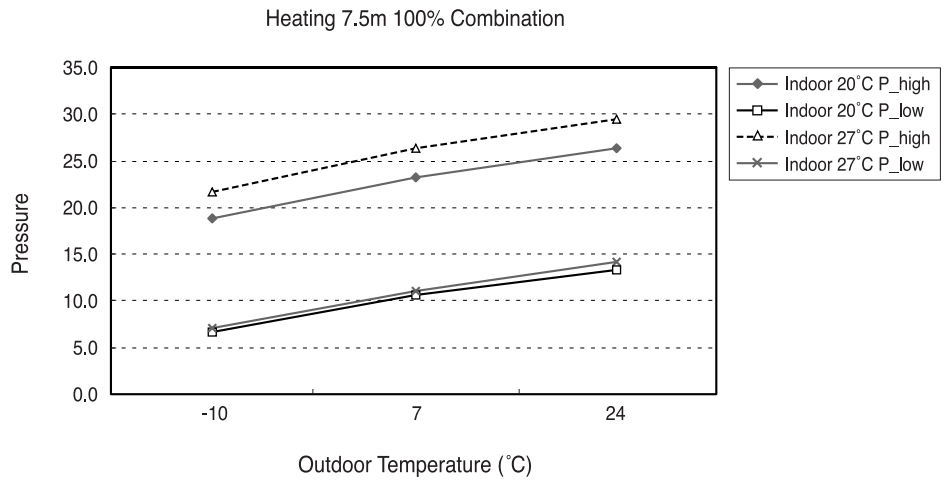




■ Heating(7.5m–Piping)

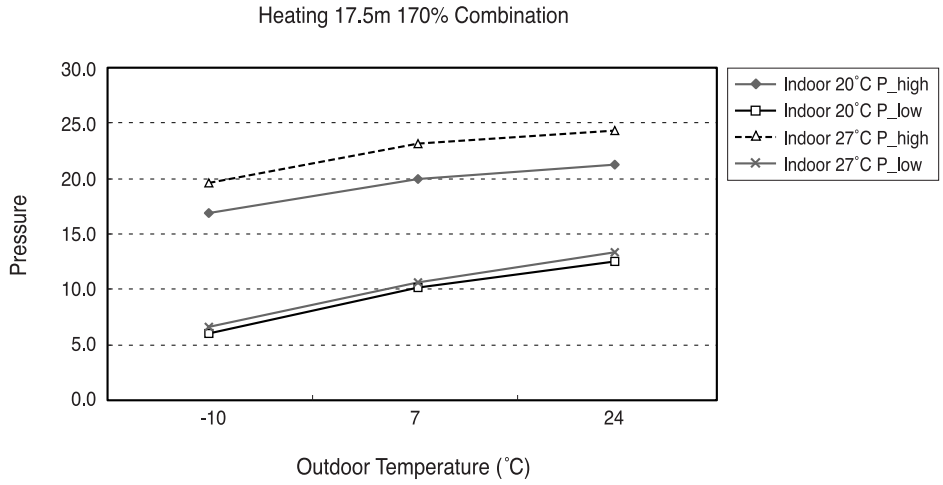
		170%(ex.026+026+035+052)				100%(ex.026+026+052)			
Outdoor	**Indoor**	**P_high**	**P_low**	**T_dis**	**T_suc**	**P_high**	**P_low**	**T_dis**	**T_suc**
-10	20	18.0	6.4	60.1	-18.9	18.8	6.7	59.8	-17.4
	27	20.8	7.0	66.3	-17.1	21.7	7.1	67.0	-15.7
7	20	21.2	10.6	57.9	-1.8	23.2	10.6	64.9	-0.2
	27	24.4	11.0	63.0	-0.9	26.3	11.0	69.1	0.5
24	20	22.5	12.9	60.8	16.4	26.4	13.4	71.9	17.3
	27	25.5	13.8	64.3	16.8	29.5	14.2	75.9	17.7

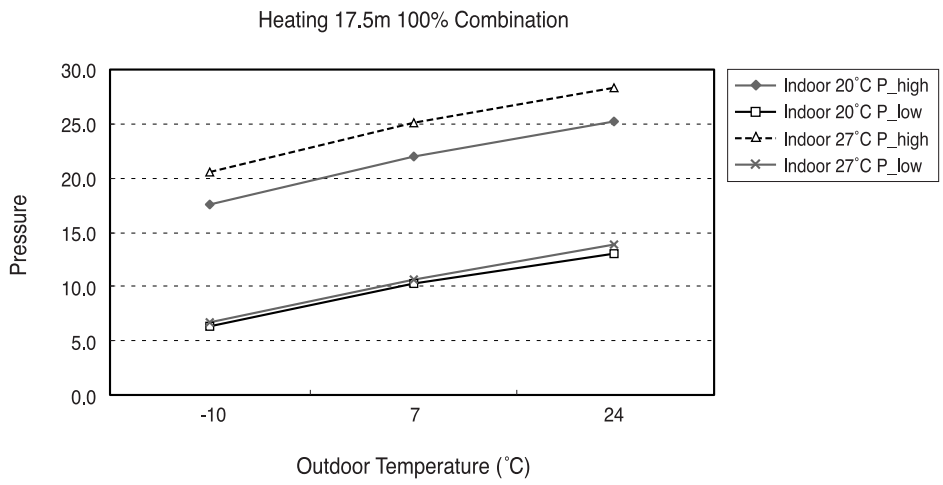




■ Heating(17.5m–Piping)

		170%(ex.026+026+035+052)		100%(ex.026+026+052)	
Outdoor	**Indoor**	**P_high**	**P_low**	**P_high**	**P_low**
-10	20 / 15	16.8	6.0	17.6	6.3
	27 / 15	19.6	6.6	20.5	6.7
7 / 6	20 / 15	20.0	10.2	22.0	10.2
	27 / 15	23.2	10.6	25.1	10.6
24 / 18	20 / 15	21.3	12.5	25.2	13.0
	27 / 15	24.3	13.4	28.3	13.8





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